A
Metarevolutionary
Manifesto

by
Evan Tabak Atlas

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INTRODUCTION

Value and Action are lovers, and this is a book about their relationship.

In what follows, we will explore how crises, as opposed to mere problems, are catastrophic disruptions to the continuity of life. And, in these contexts, the right action at the right time is revolutionary. Revolution, as we understand it, is an irreversible choice at the life-or-death fork between possible actions. A crisis is a nonlinear disruption of great magnitude; and this makes a revolution a nonlinear disruption to the disruption. Where a crisis is imagined as a projectile flying towards a body, a revolution is an object with equal or greater force sent out to meet and deflect it.

Thus, any number of revolutionary manifestos could be written. At the time of writing, we are faced with crises involving our governments, economic systems, educational institutions, emerging technologies like Artificial Intelligence, and our relationship with energy and the environment—to name but a few. Indeed, revolutionary manifestos can and should be written to address these things. This is a book for people who want to write those books —or even read them. This is a book for people who care, but feel that impulse draining from them with each impact from an endless barrage of crises.

This metarevolutionary manifesto is about moments of transformation being applied to the underlying conditions of all transformation. Instead of applying the usual revolutionary approach, which chooses one crisis out of many with a certain arbitrariness, the present goal is to address all crises and revolutions at once. A metarevolution is simultaneously between and beyond them all.

Likewise, there are things you can learn by studying a fish, and other things you can only learn by studying the ecosystem in which it exists. We are taking both views at once, but leaning to the latter view—of the proverbial water of these fish, and their biosphere and even their cosmos—in the hopes that it serves as a foundation for all those focused on fish. These are complementary—and so this book is indeed about you, and for you, for your home, your crisis, your revolution. You are not wrong for passionately engaging with a crisis close to your heart. The metarevolutionary approach is simply an appeal to place revolutionary action within a more comprehensive

context, in the same way one could either focus on a single person or a city of people.

In recognition of what some have started to call a metacrisis, there is a growing need for a higher-order revolutionary framework—one which isomorphically matches the growing complexity of our interconnected crises. This book proposes that we must first be metarevolutionaries before we can be effective in the revolutionary domain, much less the political and social domains of our daily lives. So let us turn revolution upon itself and radically transform the underlying conditions of radical transformation. We will take on our metacrisis with a metarevolution, and also demonstrate metarevolutionary principles which will be applicable to any future metacrisis.

This will take us on the following path during the first half of this book, which focuses on our metacrisis: **(1) Meaning** - the first section approaches certain aspects of our metacrisis (and metacrises in general) by way of an inquiry into meaning, and what a crisis in that domain entails. We will encounter subjects like ontology and ethics which form an integral part of any worldview, and all action taken within that world; **(2) Complexity** - the second section deals with the principles of physics, complexity science, and thermodynamics as they relate to our metacrisis, and hints at how these same principles may be of use in a metarevolution. We will discover the profound significance of everyday things such as action and information; **(3) Games** - in this concluding section of the first half, we will explore a specific kind of complex system called a game, which is more broad and more important than its name might suggest. Important metarevolutionary principles are uncovered when we turn our attention from action to interaction.

In the second half, the focus is metarevolution, in principle and practice. This will take us through the following subjects: **(1) Centers of Action** - having discussed, in the first half, our meaning crisis and some of the crucial characteristics of complex systems, we can begin to respond to the challenges these domains present to us. In short, we must perpetually work to discover and actualize meaning, and do so in such a way which takes us, simultaneously, on a path of personal individuation and cultural complexification; **(2) Transformation** - here we see our meaning crisis from the "other side", or in other words, how the processes which lead towards

meaninglessness may be reversed in order to put us on a path back towards meaning. In particular, this becomes the culmination of the core ideas pertaining to metarevolution: A (revolutionary) method of overcoming our meaning crisis is put forward, and this solution is simultaneously demonstrative of more general (metarevolutionary) principles. As a result, this book becomes about overcoming any crisis or metacrisis you may confront; **(3) Coda: Love** - this is, after all, about the love between Value and Action. This relationship permeates the silent spaces of this book. In this brief synthesis, all of the subjects in this book are united in love.

We live in a time of too-many-crises-to-count. They are all swirling in shared waters—blurring the edges between them. Because of this, there will be many varieties of crises and revolutions which are not specifically addressed in this book. But therein lies the metarevolutionary mindset: We are addressing all of these areas at once. Some readers may find it callous that some specific crisis was not addressed directly. Yet, please believe, all such crises (and their resolutions) are the subject of this book. This manifesto is not meant to devalue the things you care about by leaving them out, but to empower you with brand new tools and perspectives by approaching what you care about from new perspectives. The shift in perspective, namely, involves the movement from crisis to metacrisis, and from revolution to metarevolution.

This book, in addressing Value itself as light-source, and Action as the diverse garden growing in its embrace, is about the deepest underlying conditions of all change in our world.

1

METACRISIS

"Where is the way to the way?"[1]

- Lao Tzu

Which crisis deserves a lifetime of attention and action? An impassioned manifesto could be written about any one of these crises which threaten our health, happiness, and whole existence. This manifesto is different. In light of the great number of crises we face, and the development of global (political, economic, and social) systems which, among other things, form bridges between all people and all problems, a one-at-a-time approach no longer makes sense. Today, crises interact at high-speed and twist together like strands of an intricate spiderweb. We are faced with systems of crises in which it is hard to tell where one stops and another begins. That is what we call a "metacrisis". A metacrisis is a complex system whose elements are crises, and exhibits, as a unified whole, its own unique behaviors and properties beyond those found in its elemental crises.

In addressing our metacrisis, rather than individual crises or even a "set" of crises, we are acknowledging that many crises are interacting like the diverse organisms of an ecosystem. These interactions generate new systemic properties—which is to say that a metacrisis makes its own crises, and has features and patterns not seen at the level of individual crises. This implies that we must pay attention to this between-space of crises if we wish to resolve any individual crisis. That is the first meaning of a metarevolution: Action oriented towards the interaction of crises, and the unique properties of the complex system called a metacrisis. The first step in addressing a metacrisis is meeting it at its own level of complexity, rather than the level we are used to, which would simply be the revolutionary mode of action.

Now, perhaps we should clarify what is revolutionary in order to further understand what is metarevolutionary. First, this is a political manifesto. Politics means embodying and enacting a philosophy or worldview —a movement from comprehending what is to deciding what ought to be.

Schlitz, Vieten & Miller: *"A worldview combines beliefs, assumptions, attitudes, values, and ideas to form a comprehensive model of reality. Worldviews also encompass formulations and interpretations of past, present, and future. In our worldviews, we construct complex conceptual frameworks to organize our beliefs about who we are and about the world we live in."*[2]

The political, roughly characterized, is linear and simple—the progressive updating of worldviews. This is not a political manifesto in that it addresses the state of our world at the legislative or institutional level of detail. But we are considering these individual trees even as our goal is to step back and view the forest as a whole. We are including but transcending the political.

For similar reasons, this is a revolutionary manifesto. Complex systems of all kinds have a characteristic pattern of nonlinear changes. Ecological systems, for example, experience linear changes and "steady states" or periods of relative calm, which are punctuated by nonlinear "phase transitions" or "metasystem transitions". Here we can contrast the usual tempo of biological evolution with the "intelligence explosion" which led to our human civilization; or the gradual development of a child with the psychological transformation which occurs in an adult due to a mystical experience or a traumatic event. The revolutionary is to the political as the nonlinear is to the linear, and the discontinuous is to the continuous.

Klaus Mainzer: *"Local changes in the ecological, economic, or political system can cause a global crisis. Linear thinking and the belief that the whole is only the sum of its parts are evidently obsolete."*[3]

Thus, as an aside (but an important one), revolution does not mean violence. Here, it simply refers to those moments of rapid change which transform the garden of complex systems composing our actuality.

And now we may understand the second meaning of metarevolution, which is its "beyondness" in relation to this revolutionary (nonlinear) pattern which are epoch-defining moments of change. It involves a "step up" in complexity—the parallel of the shift from crisis to metacrisis. All complex systems experience "political" change as in the steady beat of a drum, and "revolutionary" change as in the crescendo of a symphony. Thus, if systems, like political systems, are defined by these kinds of change, then a system-of-systems (as in the nested political institutions which span from town to state to planet) also has its own pattern of punctuated equilibrium.

A metarevolution is action which includes and transcends individual threads of revolutionary action; metarevolution is action directed between and beyond the complex system of crises known as metacrisis; metarevolution is complex heroism. The hero is the mythological revolutionary—they are

Phase Shifts of Water

		State		
		Solid	Liquid	Gas
Phase shift	Evaporation/ boiling		→	*
	Sublimation	→		*
	Deposition	*		←
	Condensation		*	←
	Freezing	*	←	
	Melting	→	*	

equivalent, but operational in different domains. The hero or revolutionary does not have to be human or an individual, only an agent. So either of these can also describe agentic unities such as businesses, cities, or planets.

Valentin Turchin: *"An agent is the carrier of will, the entity that chooses between possible actions."[4]*

A society is revolutionary/heroic when it is capable of perpetuating itself by responding to crises with effective action. Heroism, or revolution, is any agent's timely rejection of disintegration. It is the only choice which leads to further life when faced with a crisis.

Reinhart Koselleck: *"For the Greeks the term 'crisis' had relatively clearly demarcated meanings in the spheres of law, medicine, and theology. The concept imposed choices between stark alternatives—right or wrong, salvation or damnation, life or death… Conceptualized as chronic, 'crisis' can also indicate a state of greater or lesser permanence, as in a longer or shorter transition towards something better or worse or towards something altogether different. 'Crisis' can announce a recurring event, as in economics, or become an existential term of analysis, as in psychology and theology… At all times the concept is applied to life-deciding alternatives meant to answer questions about what is just or unjust, what contributes to salvation or damnation, what furthers health or brings death."[5]*

Right action at the right time is heroic and revolutionary—both confront crises and transform them into moments of positive change.

A metacrisis, then, is a complex system of crises. An ecosystem is to an animal what a metacrisis is to a crisis. "Meta" conveys a dual meaning of "between" and "beyond". Later sections of the book will go deeper into the concepts of "systems" and "complexity" in their full meanings. But for now it is important to know that metacrisis and metarevolution together form a worldview which takes into account the chaotic, nonlinear dynamics that exist in all complex systems, and especially this one which includes the whole Earth and beyond.

H.T. Odum & Elisabeth Odum: *"The word 'system' refers to anything that functions as a whole by the interaction of organized parts."[6]*

Edgar Morin: *"[But] what is complexity?"[7]*

Yaneer Bar-Yam: *"[Truly,] one of the hardest things to explain is why complex systems are actually different from simple systems."[8]*

Edgar Morin: *"At first glance, [complexity] is a quantitative phenomenon, the extreme quantity of interactions…between a very large number of units. In fact, any (living) self-organizing system, even the simplest, combines a very large number of units, in the order of billions, whether*

molecules in a cell, or cells in an organism (more than 10 billion cells in the human brain, more than 30 billion for the organism). But complexity is not only quantities of units and interactions that defy our possibilities of calculation; it also is made up of uncertainty, indetermination, and random phenomena. Complexity is, in a sense, always about chance."[9]

Francis Heylighen: *"[And I believe there is an] 'objective' core in the different concepts of complexity. Let us go back to the original Latin word 'complexus', which signifies 'entwined', 'twisted together'. This may be interpreted in the following way: in order to have a complex you need to have two or more components, which are joined in such a way that it is difficult to separate them."*[10]

Thus, the complexes or "wholes" studied by the science of complex systems may be contrasted with complicated-but-not-complex "heaps" of parts.

Ervin Laszlo: *"The decisive difference is that wholes are not a simple sum of their parts, and heaps are."*[11]

Complex systems, as unities-of-multiplicities, must then be treated as entities unto themselves, and this understanding is a significant factor in our metacrisis. A metacrisis is itself a complex system, not a "heap" of individual crises. With a complex system, revolutionary change is insufficient and overly narrow. It is (sometimes) a well-meaning attempt to make the world better—to solve a crisis close to home. Whereas revolutionaries confront a single problem in a linear fashion, metarevolutionaries face the challenge presented by the complex system of crises called a metacrisis, which is chaotic and nonlinear.

This book, for obvious reasons, can't be about every crisis and every revolution. Instead, it builds the metacrisis-metarevolution framework. In the case of our metacrisis, you could say this book looks between and beyond the complex system of crises in order to find the problems which cause the most problems.

Jonathan Rowson: *"The simplest view of the metacrisis then, is that it's about whatever underlying crisis is driving a multitude of crises."*[12]

This book generally shares this view, while focusing on a view of metacrisis as a diverse, dynamic world of problems, opportunities, potentials,

choices, value, meaning, and the totality of life. And this understanding of our actuality implies the need for a metarevolution, which is composed of actions oriented towards transforming value-in-action—the most fundamental element of experience.

This view should be useful to readers who wonder why certain things are left out of this book. The answer is that you are probably right that there is some kind of crisis which is important, and causes a "multitude of crises", and yet is not thoroughly addressed here. If you see a crisis worthy of revolutionary change, understanding our metacrisis and becoming metarevolutionary will make you more effective in confronting the great challenges of our era.

In going between and beyond crises and revolutions, metarevolutionaries have no objectified Other. Metarevolution is the way of compassion and wholeness. The scapegoating, cleaving tendency of the traditional revolution is an eternal pull, and navigating that risk requires a complex-system-informed worldview—where people are an "I" and a "We" simultaneously, and there is no one and no thing we can harm without harming ourselves. If we truly wish for a better world, our actions must be mutually coherent, or else we are likely to fix one thing while breaking another. This is the only sense in which revolution is inherently violent—containing the violence of fragmentation and externalization, the violence of absolutizing the part at the expense of the whole.

Edgar Morin: *"A simplified, linear vision has every chance to be mutilating."*[13]

We become metarevolutionary to minimize the externalities of our actions—to take only those actions which are good from every perspective, and not just our own. This is because the kind of change which externalizes its costs dooms us to betray our own values, however good our intentions.

Our metacrisis is the totality of challenges which present us with life-or-death choices. And a metacrisis, at any time, must be met by a metarevolution: The only kind of action which renews and beautifies and perfects life at the moments of greatest need.

Through the first half of this book, we will get a better understanding of our metacrisis by way of one specific crisis which shall act as an Ariadnean

thread. The chosen crisis relates to Value and meaning (or value-in-action). And, while other crises could have been similarly instructive, a focus on our meaning crisis in non-arbitrary. Crises within a metacrisis, as we will see, can be deep or shallow in relation to the whole system. As such, part of the metarevolutionary orientation is the desire to address the deepest-possible crisis at any given moment—because the deeper the crisis, the more it touches every other crisis. A shallow crisis is still urgent, but has less relationality to the metacrisis as a coherent whole; i.e., it is not, compared to other crises, one which acts as fuel for others, and its resolution will have a smaller effect on the metacrisis in which it is contained.

We take Value and Action to be the most fundamental features of reality; whereas meaning is contextual value, and Action is what embodies and transforms meaning. So a meaning crisis is the result of the process of value-in-action moving in the wrong direction. And, similarly, if Value and Action are the most fundamental features of everything, metarevolutionary change which addresses our meaning crisis has the deepest implications for our metacrisis.

Thus, our meaning crisis has been chosen as the prototypical crisis-which-generates-crises, and is therefore a domain in which the magnitude of change resulting from our efforts will be far larger than comparable effort exerted in the resolution of other areas of our metacrisis. At the same time, a metarevolutionary resolution to our meaning crisis will be demonstrated in the second half of the book—being metarevolutionary precisely because of its simultaneous applicability to the entirety of a metacrisis and any single crisis within it.

1.1

MEANING

"The first thing that comes to the attention of the practical reason, which is oriented toward action, is what is good; for every agent acts for an end which has the nature of a good. And so the first principle in practical reason is the one that is founded on the nature of the Good: The Good is what all things seek. Therefore, the first precept of law is this: What is good is to be done and pursued; what is bad is to be avoided. All the other precepts of natural law are founded on this, so that all the things that practical reason naturally recognizes as human goods pertain to precepts of natural law as things to be done (or to be avoided)… The precepts of natural law…are the first principles of human actions."[14]

- Thomas Aquinas

Life has two oppositional orientations: optimism and nihilism. Let us first explore this topic through symbols and mythology, then through cultural epochs, and finally through the metaphysics of these two -isms. Our goal is to understand and overcome our meaning crisis—and, via this exploration, become metarevolutionaries who are ready to confront our metacrisis and any crisis within it.

We begin this ambitious endeavor with stories, symbols, myths, analogies, and the worldviews into which these related domains coalesce. These aspects of worldviews are where the actualization of meaning plays out, for better or worse.

A worldview, containing possible answers to the metaphysical questions of "What is?" and "How do we know what's real?" and "What should be?", is a condition underlying all human action. It is possible, and indeed probable, to get these questions wrong. And it is the case that a great number of people today, who may understand their own worldviews as positive, life-affirming, and optimistic, have unknowingly adopted beliefs with rotten cores. The rot is nihilism, or meaninglessness. It is a stowaway on the ship of the modern scientific worldview, which flies the banners of rationality, humanism, and progress, while secretly harboring misanthropy and violence. Though it can also be found in religious doctrines and secular philosophies of all kinds.

A meaning crisis is the putrefaction of value. It is the relationship of Value and Action moving in the wrong direction—and it is perpetuated by the nihilistic metaphysics built into the worldviews of so many people today.

Valentin Turchin: *"The purpose of metaphysics is to find in our experience the most fundamental elements or aspects of the world."[15]*

Forrest Landry: *"[And] the basic questions of metaphysics include: What is the nature of existence, creation, and interaction? What is the nature of the known, the knower, and of knowing, or between the known, the unknown, and the unknowable? What is the nature of causality, of choice, and of change? What is the nature and basis of value, purpose, and meaning?"[16]*

Ervin Laszlo: *"[Likewise,] worldviews are constellations of concepts, perceptions, values, and practices that are shared by a community and direct the activities of its members."[17]*

So we must address our meaning crisis through metaphysics—or, in other words navigate ourselves out of nihilism and towards optimism. Every political manifesto contains metaphysics, whether implicit or explicit. Some of them enrapture people in a simplified view of a complex whole (which makes them focus on a crisis in isolation instead of the metacrisis in which it is situated), and this view makes them unknowing participants in the perpetuation of broken philosophies.

This section will deal with the crisis of meaninglessness and nihilism, and the solution to be found in optimism. Both orientations are ongoing human possibilities, which means that we will always find ourselves in the precarious middle, and must continually open the door to optimism, and close the door to nihilism.

To understand what we are up against, we must begin in the domain of symbols and myths. The view of this book is that symbols (and analogies as an inseparable part of them) are one of the most important and ubiquitous features of reality. It will be argued that there is nothing which is not symbolic.

Francis Heylighen: *"A symbol is a token, such as a word, picture or gesture, that conventionally stands for or represents something else: the symbol's meaning, reference or denotation. The use of symbols is arguably what made humans different from the animals out of which they evolved. Symbols gave us the language we use to not only communicate, but reason."*[18]

A myth, then, is an athanor for the transformation of symbols. And both myths and symbols form parts of a universal language in which the love between Value and Action represents itself.

What worldviews express narratively and with specificity, mythology expresses analogically and paradoxically. In myth, we symbolize (attempt to concretize) the absolute which is just beyond our relative horizon. Myths are more than stories—they are worldviews in the process of transformation, and unconsciousness in the process of becoming conscious. And the symbols embedded in myths are clues to what ails a society, and what might come next—they give voice to our Shadow.

The two human possibilities of optimism and nihilism, the battleground on which meaning is preserved or destroyed, were long ago depicted in two of Plato's myths.[19]

The Myth of the Cave
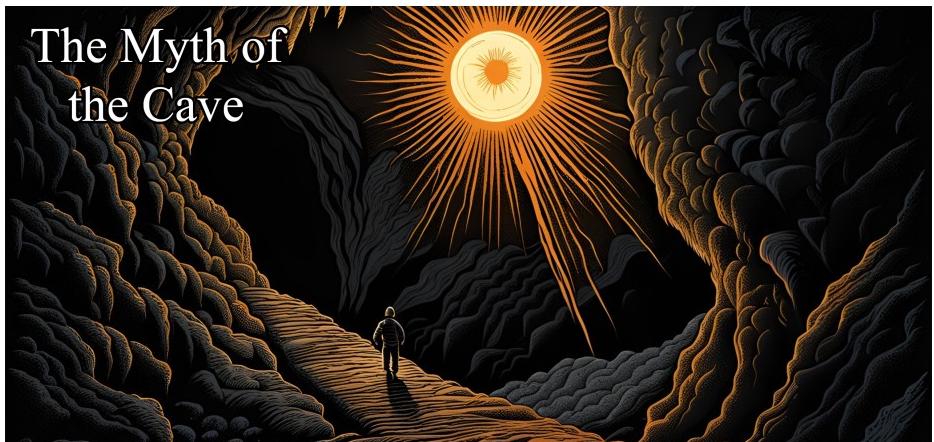
"Plato uses myths to explain his conception of human life, His most famous picture is that of the Cave...wherein people facing the wall at the back see at first shadows, then, turning round, the objects, themselves imitations of real things, which, in the light of a fire, have cast the shadows. They (we) may perhaps go no further, taking the fire to be the only source of light. Some of us may venture on, glimpsing another light beyond, and emerge into the sunlight, where we are dazzled and can only look down at shadows and reflections, then, raising our heads, see the real things themselves and then (if finally enlightened) the sun. This parable portrays a spiritual pilgrimage from appearance to reality. We turn round, we climb up, we raise our heads. At each stage we see at first the shadows of what is more real and true. Plato's Theory of Forms deals with logical and moral questions. The (mythical, postulated) Forms (or Ideas) are models, archetypes: universals, general concepts as distinct from particular entities, and, in their ethical role, moral ideals active in our lives, radiant icons, images of virtue. The moral Forms are interrelated. (Justice relates to Truth.) The supreme power, which unifies the Forms, is the Form of the Good, pictured in the Cave myth as the sun."

- Iris Murdoch, "Metaphysics as a Guide to Morals"

"Plato used it to represent his most fundamental idea: that man is destined by his creator to find a path from the dark cave of material existence to the light of a higher, purer, and more spiritual truth. It's when we rise above the merely human, Plato insisted, and enter the realm of the everlasting and immortal and changeless that we achieve wisdom."

-Arthur Herman, "The Cave and the Light"

The Myth of Er
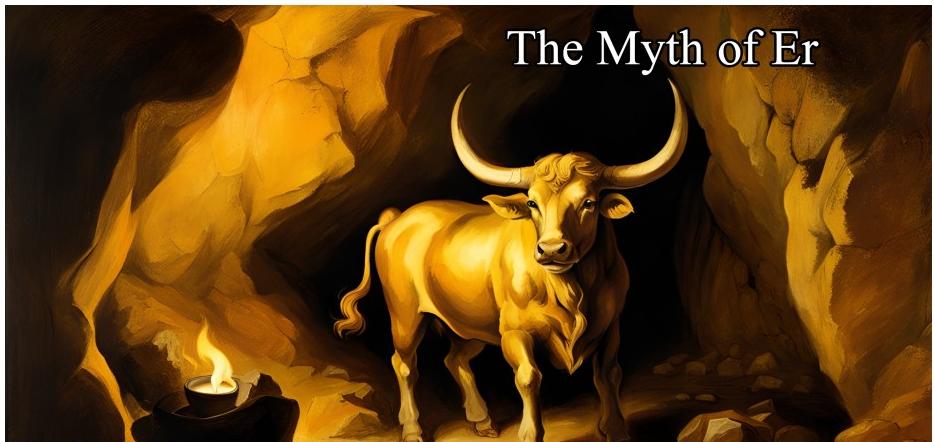
"He was working as a shepherd for the then-ruler of Lydia, when there was a great thunderstorm and an earthquake cracked open a part of the ground... He was amazed at the sight and went down into it and he saw, amongst many other marvelous objects from mythology, a bronze bull, hollow, with windows. And when he peeked inside he saw a corpse, which seemed of superhuman size, with nothing else on but a gold ring on its hand, which he removed, and he went out... The usual meeting of the shepherds was taking place, in order to make the monthly report to the king about the flocks, and he went, wearing the ring. Sitting there with the others, it so happened that he turned the socket for the gem towards him, into the palm of his hand, and when he did this, he became invisible to those sitting around him, and they spoke about him as though he had departed... Taking note of this, he tested the ring to see if it had this power and in this way came to this conclusion, that, with the socket turned to the inside he became invisible, while turned to the outside he was visible. Perceiving this, he immediately...set upon the king and killed him... This is strong evidence, someone might surely say, that no one is just willingly but by necessity."

- Plato, "The Republic"

"The story of Gyges... is the exact antithesis of the ascending movement depicted in the allegory of the cave, in that it describes the downward movement of a man seeking in the laws of nature an excuse to escape responsibility in social life... And the ring...will turn him, when he returns where he came from, into a leader enslaving his fellow men, not into a teacher freeing them from their natural chains... Then, the final usurpation is that of a ruler who embraces materialistic views to kill the gods and make himself god in front of men."

- Bernard Suzanne, "The Ring of Gyges"

The first of these portrays the successful opening of the door to the Good—to Value and meaning.[20, 21] The second one portrays the failure to close the door to Power.[22] Optimism is the belief that we can (and must) open the first of these doors and simultaneously close the second; nihilism is the belief that the first of these doors does not exist, and that the second can never be closed. The myth of the cave finds modern parallels in various versions of the Grail quest or the Hero's Journey, while the myth of Er (who finds the ring of Gyges) bears similarities to Tolkien's *"Lord of the Rings"*—which, arguably, advances that older myth by depicting the successful destruction of the One Ring. In the second half of this book, we will explore the combination of these two mythological halves into a coherent whole—such that the two doors we've spoken of (the one we must open and the one we must close) come together in one unified myth. That is the requisite starting point for addressing what has become, in our time, the loss of Value and the ascension of Power—a crisis of meaning, or value-in-action.

This, our meaning crisis, has been coming into view for some time now through another familiar and current myth: The zombie apocalypse. So let us explore that myth as an illustrative example of how not every crisis affects our metacrisis in the same ways, and actions which address certain crises can have a disproportionately large effect on the entire complex system of crises we face. Our meaning crisis is one of these points of leverage that interest metarevolutionaries. It is perhaps the deepest crisis within our metacrisis.

And if value and meaning are indeed at the center of our metacrisis, then the zombie apocalypse, as a symbolic phenomenon, represents one of our most important modern myths. It is more than fiction. Zombies symbolize something real in our world, and the entirety of our metacrisis depends on our response to this crisis. If we want to continually discover and develop meaning, wisdom, connection, and all that is most splendidly human, we must understand the shadowy opposites of these values. Humanity implies the ongoing potential for zombieness.

> **John Dee:** *"All bodies have edges in common with their Shadows."[23]*
> **Erich Fromm:** *"[So] perhaps man is both wolf and sheep?"[24]*

Both of these divergent possibilities also have the potential to spread from individual to individual. Zombies can and will spread in place of humans—nihilism in place of optimism—and eventually engulf our world.

Owen Barfield: *That is why we look like becoming, not the sons of God, but the husks of Man.*[25]

Genre-defining series, *"The Walking Dead"*[26], exemplifies the present crisis: At various points in TWD, characters discover the patterns by which zombies detect humans. If a zombie detects any markers of humanity directly around it, it will eat the source of the sanguine signal. If a zombie detects the stench of another zombie, it will just walk next to it until a meal is found. The zombies (or "walkers") seem to be able to identify zombieness and humanness through sight, smell, sound, and (crucially) behavior. The first three provide the justification for a proactive measure seen throughout this story: To get around safely in the zombie apocalypse, cover yourself in zombie blood and remain silent. Most of the time, that seems to be enough to mask humanness from zombies. Just don't do anything too human, and you won't risk your behavior giving away your macabre disguise.

This speaks, on two levels, to the salience of zombies in the context of human culture: Physical and inner resemblance. TWD differentiates the two by showing the relative ease of returning to humanity having covered yourself in zombie blood—as in, the smallest of civilized acts like taking a shower is enough to "bring you back" to humanity. But the zombie can more deeply infect the living person, creating an inner resemblance that is not so easily washed away. This is voiced by various characters who declare that people they knew "weren't the same anymore", had "lost their way", or "lost themselves". It illustrates an important feature of the zombie narrative, which is the depths to which they infect humans (or societies)—superficial and anomalous at first (the breakout), then existential and ubiquitous (the apocalypse). Remember, zombies symbolize not just nihilism and the collapse of meaningful life, but also "dark mirrors" which, when gazed at, distort our self-image. Their presence makes us more like them, makes us desire what they desire. As we will see, however, apocalyptic moments are ouroboric: "apocalypse" means "to reveal" or "unveil", so as it shows itself, it consumes itself and gives birth to something new.

Edward Edinger: *"Apokalypsis is just the Greek word that was used for…'revelation'. But, specifically, it refers to the 'uncovering of what has been hidden.' The root is the verb kalypto, which means 'to cover' or 'to hide'; the prefix is the preposition, apo, which means 'away' or 'from'. So, apokalypsis means 'to take the covering away' from what had been secret or covered--revealing thereby what had previously been invisible."[27]*

This progression is evident, too, in how earlier zombie stories focused on more personal narratives and initial outbreaks—as in *"White Zombie"* and *"Night of the Living Dead"*. More recently, though, the infection has reached an inflection point epitomized by an all-out zombie apocalypse. As they say on TWD: *"It's their world now. We're just living in it."*

How might we get back to a world we love, which seems self-evidently worth preserving for future generations? This brutal, necrotic world invites the soul into self-annihilation. Everywhere, we see symptoms of the psychological infection called hopelessness—which results from the magnetic pull of zombies' inner vacuousness. This neglect of the soul is a dead-end, and something must change.

Zombies thus represent a world without optimism. This optimism is not a banal "hoping for the best". It is the opposite of nihilism. Optimism is the orientation of love, and the belief that value and meaning are real and discoverable and absolute—and the complementary view that this comes with a moral demand to make proper use of our humanity: making possible value into actual, contextual value, which is also called meaning. Nihilism is the orientation of power, and the belief that value and meaning are illusory and constructed and relative—and the complementary view that nothing truly matters.

Stanley Rosen: *"Nietzsche defines nihilism as the situation which obtains when 'everything is permitted'… We can, of course, attribute value by an act of arbitrary resolution, but such an act proceeds ex nihilo or defines its significance by a spontaneous assertion which can be negated with equal justification. More specifically, there is in such a case no justification for choosing either the value originally posited or its negation, and the speech of 'justification' is indistinguishable from silence."[28]*

Zombies are symbolic carriers of nihilism, and they lead us towards a place that poets call "Waste Land",[29] and philosophers call "Flatland".[30] These are complementary ways of saying that the worldview zombies represent is metaphysically empty, flat, absurd, or spoiled. To "What is?" they answer: "Nothing". Zombies are us, but the worst versions of us. If morality is the good use of energy, zombies are the total abdication of this duty.

Mark Anderson: *"The word 'nihilism' comes from the Latin 'nihil', which means 'nothing'."[31]*

Karen Carr: *"The same root appears in the verb 'annihilate', meaning, 'to reduce to non-existence'."[32]*

Mark Anderson: *"Quite literally, then, [nihilism] means 'nothingism'. Odd as this sounds, the translation does capture something of the substance of the nihilist's position. It is often said the nihilist believes in nothing, but it is not quite true that a nihilist has no beliefs at all—one need not decline to believe that one is alive or that the external world exists in order to be a nihilist; the main point is that the nihilist believes in nothing metaphysical, that he rejects belief in God, soul, postmortem immortality, objective moral value, Platonic Forms, the Neoplatonic One, and every other supposed metaphysical entity or truth. Nor does he believe that human life or the universe has any objective meaning, purpose, or goal, for the source of this meaning or purpose could only be metaphysical, which the nihilist's position rules out."[33]*

Iris Murdoch: *"This may be felt as the senselessness of everything, the loss of any discrimination or sense of value, a giddy feeling of total relativism, even a cynical hatred of virtue and the virtuous: a total absence of love… Emptiness: absence of God, absence of Good."[34]*

James Hillman: *"In this condition a man is out of himself, unable to find either the outer connection between humans or the inner connection to himself. He is unable to take part in his society, its rituals, and traditions. They are dead to him, he to them."[35]*

Patrick Harpur: *"[And so it becomes apparent that] any attempt to uproot soul only makes it come back at us in distorted form, as a demonic image which has to be killed again and again."[36]*

Before we move forward with this understanding of zombies, it is worth considering other interpretations and the history of this symbol which inform, but are different from, the present meaning. Anthony Judge, for example, notes the zombie's significance in the context of global politics. In this sense, the zombie can symbolize the failure or "brain-death" of our governments and other important institutions.

Anthony Judge: *"The world has been confronted by the assertion… that NATO is 'brain-dead'… Rather than explore the case made with regard to NATO alone, as most will choose to do, there is a case for arguing that the institutional problem recognized is far more fundamental and general. This is justified by the warnings of many commentators and institutional reports that governance at this time—whether global, regional or national—can be readily perceived to be overwhelmed in ways which indeed suggest that 'brain dead' is an appropriate diagnosis."*[37]

This accords with our view that a metarevolution is a progression beyond a "brain-dead" form of problem-formulation and problem-solving—relics from an era of linear, simple, narrow theories of change. Existing revolutionary theory has run out of time and has not come to save the day, turning instead into the anachronistic twin of our brain-dead politics. Our metacrisis has presented us with a life-or-death bifurcation point, for which the only suitable response is metarevolution. We must now complexify to survive and run in order to stand still—to paraphrase the Red Queen.[38]

Being metarevolutionary involves seeing our meaning crisis itself as a symbol—pointing beyond itself. By exploring this crisis and its resolution, we are actually putting forth new metaphysics and new modes of actions, such that what we learn here will be applicable to all present and future crises. Zombies are a generation-defining symbol, not just as carriers of meaninglessness, but as the face of the old modes of action which are impotent in today's world. Where revolutionaries propel action outwards towards some narrowly-defined crisis, metarevolutionaries turn action inward towards itself—being oriented towards greater complexity and coherence of action and thereby changing the underlying conditions of all change. It is in this sense that zombies symbolize the tyranny of the past over the future, and

the failure of action to rewrite itself. They bring to the surface the feeling that the government has become a congress of corpses.

Anthony Judge: *"The point has been made otherwise by Philip K. Howard who argues that: American Democracy is basically run by dead people. By this is meant that the important decisions made by government have been preset in legal concrete by statutes and regulations written in past generations and not altered for decades… [This is] related to concerns regarding the 'dead hand' of authority, of centralized control, and of the past."*[39]

Bobby Azarian: *"An agent acts on its environment, observes the change in that environment, updates its model by encoding this change in memory, and through iterations of this process, the organism's world model creates a data variable for itself. Since brainless organisms can't encode the causal consequences of their actions, they lack a variable for themselves and any real understanding of themselves as a causal actor. Because they lack self-modeling capacity, brainless organisms are presumably what philosophers call 'zombies', which are systems that do not experience the world but appear to move with conscious intent."*[40]

Where humanity is defined by endless transformation and self-realization, zombieness is defined by arrested development. Zombies can also be symbolically connected to loss of identity, social estrangement, ignorance, mind-numbing labor, and post-traumatic stress.

Anthony Judge: *"Potentially experienced as equally tragic is estrangement in relationships—most notably with respect to friends and relatives—possibly exemplified by the dramatic phrase 'you are now dead to me'… There is then the implication that the ignorant are essentially dead—yet to realize the potential of being fully alive… There are clearly many conditions under which people experience themselves as 'dead'… Most common is the sense of deadening employment… More extreme are those conditions in which one's identity is subtly destroyed, as in various forms of what may be experienced as slavery, whether bonded labour or a domestic environment… Perhaps more generally, any post-traumatic distress may be experienced as a form of 'living death'."*[41]

These may be considered as branches on the tree of our meaning crisis, whereas the trunk itself is nihilism and the perennial human misuse of humanity. Zombies, for us, symbolically evoke the idea that we may lose sight of our true selves, and become centers of gravity which annihilate instead of nourish—as in a black hole compared to a sun.

What zombies do not symbolize, in the present view, is the dehumanization or the objectifying "Othering" of fellow humans for not being human enough. The risk of that misinterpretation accompanies these others we've discussed, so it is best to get ahead of it.

Anthony Judge: *"Also evident is the sense in which people may be effectively framed as 'dead'—or potentially so—whether by those who consider them to be of no consequence, or by those who are initiating their elimination. Variants are evident in the framing of some as effectively sub-human. Examples include descriptions of clients, voters and spectators as 'sheep' or 'cattle'—potentially to be targeted, possibly in order to 'make a killing'… Especially problematic, given the variety of beliefs, is the sense in which everyone is potentially to be considered 'moronic' (or a 'zombie') in the eyes of some other—and therefore presumably worthy of eradication from the perspective of the latter. Caricature may go as far as defining those who fail to comprehend an argument as 'brain dead'."[42]*

Zombies are indeed a flexible symbol with a number of potential meanings. Indeed, all symbols are "fuzzy" in their boundaries and contain a subjective, experiential dimension. But zombies are not, despite this, a symbol primarily representing an external Other. On the contrary, zombies are our Shadows: the worst, least human version of ourselves and our culture—in contrast, for example, to the symbolism of Christ or a mythological hero. Zombies symbolize an inner decay which spreads mythologically through their bites, and literally through our mirror-like reflection of each other.

C.S. Lewis: *"Men are mirrors, or 'carriers' of Christ to other men. Sometimes unconscious carriers. This [is a] 'good infection'."[43]*

René Girard: *"Satan, or the devil...is a kind of personification of 'bad contagion'... Like Jesus, Satan seeks to have others imitate him but not in the same fashion and not for the same reasons."[44]*

Humans, to a degree, choose who to reflect—sometimes it is a literal person and sometimes it is a mythological person, but both are real enough to radically change an individual.

Zombies are the symbol of an inner possibility, not an external enemy. And in this way, the zombie apocalypse symbolizes our collective inability to kill our way to resolution of this crisis: Because there is no external Other; because we all "carry the infection"; because we may at any time be wolf or sheep, angelic or demonic. Thus, there is no violent revolution which could possibly resolve this crisis, for violence-to-self is the very root of the crisis. Nihilism is a power-ontology, and the way out is optimism, which we shall soon discover is deeper than "hoping for the best" and is, in fact, the value-ontology which provides the only metaphysical rebuttal to meaninglessness.

The basis of our meaning crisis is ourselves—as centers of action and vessels of meaning—as well as value per se; thus its resolution will have to involve our own transformation and a rediscovery of a true metaphysical optimism. We can't devour our way out of this, because we are the substrate of the meaning crisis. The key, we will see later, is standing "in the middle", with an awareness of our full range of potentials as bearers of consciousness.

Carl Jung: *"To confront a person with his Shadow is to show him his own light. Once one has experienced a few times what it is like to stand judgingly between the opposites, one begins to understand what is meant by the Self. Anyone who perceives his Shadow and his light simultaneously sees himself from two sides and thus gets in the middle."[45]*

So, despite the potential to interpret zombies as the Other who must be destroyed to save humanity, they truly represent a part of us which we must remain in contact with if we are to avoid psychological repression and neuroses on either the individual or cultural level. Every optimist must remember that he may have once been, and could still become, a nihilist.

Iris Murdoch: *"[This is coming into view] in our age with the incorporation of Satan into the Trinity, or into the Quaternity if we count the Virgin Mary as having been already incorporated. This inclusion of the 'dark opposite' as an essential part of the religious ideal, of course no novelty, is a Gnostic, Taoist, pre-socratic conception."[46]*

Edward Edinger: *"At the same time that Christ the good son of Yahweh was born, however, Satan the evil son was cast out of heaven, so that a decisive separatio took place in the God-image, with the dark evil aspect being split off and repressed. However, the Book of Revelation predicts that at the end of the aeon there will be a return of the repressed through enantiodromia."*[47]

And it is just this psychic integration of "the dark opposite" which is made apparent by zombie mythology and its eclipse of the cultural "fear of the outsider" depicted, for example, by alien invasion stories. We are experiencing a transition from fear of external Other to acceptance of internal Other—a point that is made by the authors of *"Zombies in Western Culture"*.

Vervaeke, Mastropietro & Miscevic: *"Extra-terrestrial invasions gained tremendous popularity in American cinema, particularly in the latter half of the twentieth century with the onset of the Cold War. As the West drew its cultural boundaries more guardedly, the alien seemed to be an effective mask for the prevailing wind of wariness and paranoia, and the fear of outsiders and espionage. Stories of alien invasion struck compelling affinities with real-life suspicions: adversaries from the outside were trying to infiltrate our society in order to advance theirs, to dissolve our systems and propagate their own, and to estrange us from one another by diluting our fellowship."*[48]

Similarly, they note, mythological villains like vampires provided a proxy for distrusting a specific out-group, and alien invasions conveyed the progressions towards the fear of total existential extinction—the kind evoked by the possibility of physical annihilation by nuclear war, or cultural annihilation as feared in a "Red Scare".

But zombies are uniquely a symbol of a decay originating from within. They symbolize a loss of meaning and a collective exhaustion in what seems like a fruitless search for a viable and optimistic worldview. They symbolize the feeling that we have become everything we hate—a feeling worse than death. As zombies, it's not just that we are gone, buried, and unable to help make a better world. As a symbolic occurrence, they reveal an even greater horror—the recognition that we are all beginning to resemble a twisted, lifeless, meaning-starved version of humanity. We see this widespread loss of meaning and yet, despite our drive to self-actualize, self-transcend, and

become more perfect versions of ourselves, we find ourselves creating a world of which we are ashamed.

Vervaeke, Mastropietro & Miscevic: *"By almost all accounts, zombies are the fictionally distorted, self-reflected image of modern humanity. Most zombie interpretations begin with this premise, that in some pivotal way, 'zombies are us'."[49]*

They are flexible and yet consistent representations of a self-perpetuating evil or moral ugliness, the kind that we internally fight so that it does not become embedded in all of our external creations. The rotting faces of zombies are used to depict a variety of planet-wide catastrophes, but it is the meaning crisis, the tilting of the scales away from optimism and towards nihilism, which is their most important symbolic meaning.

Vervaeke, Mastropietro & Miscevic: *"[The zombie's] features remain remarkably consistent from one story to the next, and it has represented many varieties of apocalypse without altering its basic nature: consumerism, poverty, hunger, political dystopia and environmental degradation. Zombies have assumed a heterogeneity of ugliness… The interpretations most favored by academics—mortality, consumerism and environmental degradation among them—are plausible without being sufficient. The mere fact that each seems to apply invalidates the proposition that any one of them can apply exclusively… More specifically, they represent the ruin of all that is meaningful within us."[50]*

Instead of embodying any specific external fear, the zombie apocalypse is the mythological cry for help which expresses our crisis of meaning. While, for example, zombies can symbolize an environmental crisis, in a deeper sense they point to a place within our metacrisis from which these other crises stem. This justifies our choice to focus on this crisis within our metacrisis—every other crisis in this complex system is connected to (and deeply influenced by) the dueling orientations of optimism and nihilism. The emptiness of zombies, their state of living-death, conveys the unfulfilled human potential to discover and actualize value. A world of zombies is a world in which nothing valuable is valued.

Vervaeke, Mastropietro & Miscevic: *"As a symbol of the loss of meaning, the zombie embodies a plethora of vacancies, empty placeholders for the building blocks of meaning."[51]*

So, as opposed to calling a person a "zombie" or an institution "brain dead" in order to create an Other, there is deep insight in the fact that a zombie's mindlessness is, in the symbolic view, the contagion which zombies spread. Zombies challenge us to live a life of continual self-reflection, rather than self-deception through the act of externally projecting our Shadows. If it is true that an optimistic, beautiful, life-affirming worldview requires the attention and energy of all, it is our own zombie-potential which lurks beneath the surface, waiting to subvert that energy, and can always spread if we let it. Any action can be moral or antimoral.

TWD explains that the zombies in that universe have brainstem activity, but "nobody home" in the uniquely human parts of the brain like the prefrontal cortex—i.e. the zombies use only the "reptilian" portion of the human brain. This sets them up for an all-too-literal search for human brains.

Vervaeke, Mastropietro & Miscevic: *"Zombies are a brain-oriented monster, in operation, appetite and vulnerability… We can find a strange twist tucked into this pattern: that the mindlessness evinced by the zombie is begotten by its brain. Zombies are a perversion of mind precisely because they notably lack the properties of mind we think fundamentally human, yet they visibly want to acquire mind in the most literal sense of acquisition. Only by destroying their brains do you destroy the threat to your brains posed by their mindlessness… The fact that brain is driving the consumption of brain is a deeply complex symbolic occurrence; culture is devouring culture, mind is devouring mind, humanness is devouring humanness."[52]*

In the same vein, zombies superficially resemble human community— a dark reflection of a pathologically individualistic society.

Jonathan Pageau: *"The zombie typifies the mob, yes, but not only. The zombie also typifies the absolute individualism, the absolute isolation of contemporary life… They're a mob but not a whole, not a community."[53]*

Coretta Scott King: *"[This is because] the greatness of a community is most accurately measured by the compassionate actions of its members."[54]*

Jonathan Pageau: *"[So zombies symbolize] the extreme perversion of our desire for communion with each other."*[55]

A human community on the descent into meaninglessness negates itself as a community. A good community is humanizing. A great community is passionately humanizing.

Insofar as the zombie apocalypse is a mythological-symbolic account of a crisis in metaphysics, loss of meaning, and loss of community, then in a complementary sense it also closely parallels what René Girard called a "mimetic crisis". Mimesis (as in mimicry) can be "directed" but not shut off—perception and appetite are two of the most fundamental characteristics of individuals and other centers of action. We will return to this topic throughout the book.

Robert Latta: *"The [individual], then, has perception, but not necessarily in the sense of consciousness. For consciousness is not the essence of perception, but merely an additional determination belonging to certain kinds or degrees of perception… Similarly, [individuals have] appetition, but not necessarily in the sense of conscious desire or Will."*[56]

Gottfried Leibniz: *"Thus it is well to make a distinction between perception, which is the inner state of the [individual] representing outer things, and apperception, which is consciousness or the reflective knowledge of this inner state."*[57]

This book deals with Action and action-centers—both can (and always do) represent nihilism, optimism, or anything in-between. All action is an expression of value, and a confession of the kind of value we are able to perceive and desire. As humans, or zombies, every action is also part of a landscape of desires which others perceive and contemplate, and thus come to imitate. Therefore, it may go without saying, that the more like zombies we become, the more others will take on the trait of emptiness. We will return to this in more detail. For now, we may say that if we are surrounded by zombies, we shall surely come to resemble them, in the way we perceive and in the particularities of our appetites, in ever-greater proportion.

The core ideas of Girard's theory also involve these basic attributes of perception and appetition, informing the concept of "mimetic desire". In this theory, part of the formative experience of our sense of what is valuable,

meaningful, or desirable are based on those aspects of the humans around us. In other words, one's neighbor has some kind of love-object, the thing or person or symbol or abstract concept to which his appetite is directed; and, by perceiving one's neighbor, desire mimetically spreads through individuals and communities.

René Girard: *"Our neighbor is the model for our desires. This is what I call mimetic desire… The rivalries of desires tend to become exasperated, and as they do, they tend to contaminate third parties who are just as addicted as we are to the entanglements of mimetic rivalries. The principal source of violence between human beings is mimetic rivalry, the rivalry resulting from imitation of a model who becomes a rival or of a rival who becomes a model."*[58]

Girard further believed that mimetic desire always leads towards rivalry, escalation of violence, and an all-out mimetic crisis which threatens the very existence of society. Additionally, Girard says, it was the act of human sacrifice, and later organized religion (which incorporated literal or symbolic sacrifices), that developed as answers to this potentially fatal escalation of mimetic desire. The common thread of it all is what he called the "scapegoat mechanism" or "single victim mechanism".

René Girard: *"These rivalries, as they multiply, create a mimetic crisis, the war of all against all. The resulting violence of all against all would finally annihilate the community if it were not transformed, in the end, into a war of all against one, thanks to which the unity of the community is reestablished."*[59]

In its general form, then, we can imagine a community being consumed by some kind of destructive crisis, leading to violence of "all against all". If this is not resolved, the community collapses. Therefore, the sacrificial ritual of scapegoating places blame for the entire crisis within a single symbolic victim—killing the scapegoat in this context means that the community perceives a resolution to the crisis.

René Girard: *"Mimetic theory is, among other things, the origins of the great cultural institutions starting from sacrificial ritual… Religion protects men and societies from mimetic escalation. Religion has an adaptive value… Based on the presuppositions of the mimetic theory, one can argue*

that many groups and societies perished and were destroyed by lethal infighting, by the explosion of mimetic rivalry being unable to find any form of resolution. The scapegoat mechanism provided a fundamental contribution to the fitness of the group. This is the reason why such a practice is found throughout the world. This is the result of a form of systemic selection, which lasted thousands of years. It was the scapegoat mechanism, and subsequently religion, which provided that fundamental instrument of protection."[60]

The scapegoat, thus, becomes "sacred". They become part of the new founding mythology of the society, carrying the dual-symbolism of demonic crisis-causer and angelic crisis-resolver.

Wolfgang Palaver: *"Girard attempts in this work to explain the nature of the 'sacred'…based on what he terms the scapegoat mechanism: the mimetic snowballing of all against one in order to resolve a crisis brought about by the social consequences of mimetic desire, which creates within the group a war of all against all. After its death, the victim is experienced by the community as good and evil at once (=sacred) because the victim is perceived as both responsible for the crisis and as that which rescues the community from being completely engulfed by it."[61]*

René Girard: *"[The] sacred is generated by mimetic snowballing and the single victim mechanism… The peoples of the world…deify their victims."[62]*

The problem, in our present context, is therefore mimetic escalation of violence in a culture which has rejected the metaphysical and institutional protections once provided by religion. This doesn't mean we need to return to religious solutions, but it does mean we need to account for mimesis and the ongoing potential for mimetic crises.

Zombies, to repeat, are a symbol of nihilism and the loss of the objective foundations of meaning. And we are in a zombie apocalypse, which means this nihilism has effectively covered our world. Adding the perspective of mimetic desire, we can see how the revolt against optimism is contagious— symbolically spreading by the bite of a zombie, literally spreading by our radical permeability to each other.

Wolfgang Palaver: *"This revolt, as has been shown, is essentially man's attempt to take the place of God. Camus claims in his analysis that*

modern history is shaped by this metaphysical revolt and the resulting tendency of humans to worship one another. Similar to Girard, Camus sees in Feuerbach's 'homo homini deus' not an indication of human progression, but rather 'the birth of a terrible form of optimism.' Of the various philosophical and historical manifestations of human divinization that emerged in the nineteenth and twentieth centuries, Camus finds most emblematic Nietzsche's Übermensch, which he views as the 'sordid god' at the heart of Nazi ideology."[63]

This "terrible form of optimism" is actually nihilism, which, as we understand it, is characterized by this trajectory of decreasing metaphysical "distance" between what might be called the domains of the absolute and relative, or transcendent and immanent; the negation of "distance" (a spatial metaphor referring to something non-spatial) creates a "Flatland" of dimensional regression. Nihilism is, in fact, the collapse of the absolute into the relative (which is what makes it a power-ontology—where there are no objective moral imperatives, and instead only subjective preferences). The metaphysical "revolt" flattens the absolute and relative into a single two-dimensional plane: The attempt to divinize and superhumanize concludes in an ironic self-annihilation. Nihilism's shrinking "distance" between perceiving subject, mimetic model of desire, and love object—which form a triangle in Girard's theory—is part of the meaning we see in the symbol of zombies.

Wolfgang Palaver: *"Girard's model of desire takes the shape of a triangle; the apex represents the mediator and the two base vertices the imitating subject and the object… As the metaphysical distance between desiring subject and model diminishes—the key component of internal mediation—the potential for rivalry and violence increases. The more negligible this distance becomes, the more probable it is that mimesis will end in rivalry and violence. The ancient proverbial truth found in mythical texts, primitive practices, and even the Bible, that brothers or sisters are much more prone to rivalry and conflict than others, can be easily understood with the help of Girard's insight… No other phenomenon displays the workings of mimetic desire more clearly than modern advertising. In television commercials, the advertised object only rarely appears directly on the screen; most often what is shown are the people in possession of the object—or those*

who desire it—in order to activate the viewer's imitation. This is a clear illustration of the triangular structure of mimetic desire."[64]

Christianity, Girard believed, did not conform to the usual scapegoating pattern, but was rather a fundamentally different kind of myth from what had preceded it. He justifies this belief by arguing that the Bible leads us to side with, empathize with, the persecuted Christ, rather than with the violent, persecutory mob. Although scapegoating was unavoidable from the beginnings of human history, the myths which were both its products and source material tend to create group cohesion through identification with the sacrificer, not the sacrificed. Christ, then, was this One Scapegoat to Rule them All, becoming a symbol of the undeserving victim. In a sense, it "breaks the fourth wall" of the mimetic process.

René Girard: *"The Resurrection is…the spectacular sign of the entrance into the world of a power superior to violent contagion. By contrast to the latter it is a power not at all hallucinatory or deceptive. Far from deceiving the disciples, it enables them to recognize what they had not recognized before and to reproach themselves for their pathetic flight in the preceding days. They acknowledge the guilt of their participation in the violent contagion that murdered their master."[65]*

Wolfgang Palaver: *"[Girard] argues that the biblical uncovering of the scapegoat mechanism made all archaic strategies of channeling violence obsolete, leading to the development of the modern world."[66]*

But, as the religious (and specifically Christian) worldview declines, we are faced with that shrinking metaphysical distance which portends a world in which the smallest spark can ignite a planetary fire.

Wolfgang Palaver: *"Mimesis in the more intensified stages of desire (metaphysical desire) carries with it an extreme potential for contagious proliferation. The spatial, social, and above all mental proximity of humans to one another in situations of internal mediation transforms mimetic rivalry into a sickness that can spread through the community like a plague."[67]*

Stories like *The Walking Dead*, then, would be rather silly and shallow if the characters just hacked away at zombies. Instead, TWD presents a world eerily parallel to our own, one in which the power of the self-sacrificing scapegoat (Christ) has failed, and society therefore reverts to the condition of

violent contagion which escalates towards a crisis of all against all. And now that we simultaneously see literal human sacrifices as horrendous, and the scapegoating of Christ as anachronistic and meaningless, we can better understand why a crisis of meaning has been spreading like a wildfire.

The zombie apocalypse is not only symbolic of a poverty of meaning, a loss of personhood, and the living-death of worldviews-past, but the mimetically contagious spread of these conditions. Our meaning crisis, mimetic crisis, and the collapse of the metaphysical conditions which support the discovery and actualization of meaning, seem to touch all other crises. And our metacrisis will certainly continue to get worse if it contains within it a zombie apocalypse—that's just common sense. In response, we need to begin the hard work of ending our meaning crisis, which includes developing a new metaphysics directly opposite to all that is symbolized by zombies: The meaningless, nihilistic, hopeless, vacant, mindless, or depersonalized world.

As much as the zombie-potential remains within us, it is in our power to move towards a world which reflects all that is most human, which includes but is not limited to ever-deepening meaningfulness, overwhelming beauty, and love. Our metaphysics, and the practical actions which follow from it, must reach and strive in opposition to our darker potential, our zombie-side. Our metarevolution must be directed at complete personhood, wholeness, and continually transcending our limitations. It must move us beyond.

We need this to be part of our metarevolution because we care about each other, and personhood is a group project. We must protect and nurture and love the minds of others, or we will surely lose our minds instead.

Douglas Hofstadter: *"Being a strong believer in the noncentralizedness of consciousness, in its distributedness, I tend to think that although any individual's consciousness is primarily resident in one particular brain, it is also somewhat present in other brains as well."*[68]

This inclines us to say that our metacrisis is deeply influenced by not understanding or caring about the nature of consciousness, by our cold indifference towards non-human consciousness, and by not giving due attention to the ways in which we affect each other's minds. The way out, by contrast, involves love—which demands: that we treat the entirety of reality as being composed of ends-in-themselves; that we disavow the mentality of "Us

vs. Them"; and that we never seek the dubious gains which come from stepping on the backs of others.

We truly are, at least in degrees, the people closest to us, and similarly they are us. Our search for meaning depends on understanding ourselves and the complex system of minds in which we coexist. Knowing who we are is a prerequisite of knowing who we wish to be. A starting point is to understand that fighting each other is like fighting ourselves. What better reason is there to show love towards all living beings than knowing that our minds are co-created in a grand dialogue?

Ervin Laszlo: *"According to Plato, two people, by challenging and responding to each other, can come closer to the truth than either one could himself... The outcome of such a dialectic is not merely the knowledge of the one added to the knowledge of the other. It is something which neither of them knew before, and which neither of them would have been capable of knowing by himself. Such a twosome constitutes a whole which has properties irreducible to those of each individual by him- or herself."[69]*

Thomas Jefferson: *"[And so,] it behooves every man who values liberty of conscience for himself, to resist invasions of it in the case of others."[70]*

Heinrich A. Rommen: *"[Humans] achieve their happiness and their destiny not as separated individuals but as coordinated members bound by solidaric responsibility for one another as mutual usufructuaries."[71]*

For now, this concludes our symbolic-mythic look at our meaning crisis. In the second half of the book, we will explore transformation and transformational experiences, which can move us either deeper into our meaning crisis (as in the foul transformation from human to zombie), or lead us beyond it. If the zombie apocalypse depicts the loss of ourselves, the optimistic reorientation is the way back to humanity. But for optimism and transformation to move us in the direction of all that is most good, we must continue to explore the nihilism of our meaning crisis. For that, we will take a look at the state of meaningfulness in our current era—to see where we have come from, and where we might go.

1.1.1

METAMODERNISM

"The question as to the meaning of life cannot be answered in one sentence or a few maxims. The answer to it is one's worldview. But we had no worldview. We had available a few vestiges of the old and some embryos of the new, but nothing more. And the only discernible force in that vacuum was the inertia of fear: an inertia that was meeting with no resistance and hence had every chance of going on forever."[72]

- Valentin Turchin

The zombie zeitgeist has entered a new phase, and in place of the initial unveiling of a crisis of meaning, we have perhaps inevitably begun to see the rise of new life within the time-worn symbol of the zombie. There are, today, an increasing number of zombie stories whose focus is a reconstruction, a resurgence of meaning, in a world which is inhospitable to the worldviews of non-zombies.

There is reason to believe that the zombie apocalypse, which began as hairline fractures in the collective edifice of meaning, has reached a crucial turning point: Nobody can deny any longer that we are looking at a pitiful heap of stones which once formed something magnificent. And there now seems to be less of an appetite for wallowing in despair at the sight of these ruins, and in its place we are seeing the outward signs of our inner hunger for meaning. We have lost our optimism—the kind that is not opposite pessimism but rather nihilism, as well as what we might call "Flatland" ontologies which predict, with robust accuracy, the descent into hellish meaninglessness.

R.M. Fisher: *"I had decades ago come across references to 'Flatland' as a metaphoric notion which represented the linear (scientific-technomechanical) mindset and values of the modern West that have dominated the natural landscape of so much of the planet, especially intense in our cities and farmlands—called the Flatland grid. It was thought to be quite 'unnatural' and causing much of our problems in the environment as well as our mind… In my view, this anti-Flatland work is the core curriculum (and politics) of the Integral Movement as a whole, both prior to and after the contributions of Ken Wilber."[73]*

Ken Wilber: *"We basically live in Flatland, and that's the real problem.... We can't even talk about helping people grow and develop the levels of consciousness if they don't even know that there are levels of consciousness in the first place. So one of our main problems is simple education, getting these ideas circulated. If you only believe in Flatland, there's no way out."[74]*

Marilyn Ferguson: *"[In] Flatland, the characters are assorted geometric shapes living in an exclusively two-dimensional world… As the story opens, the narrator, a middle-aged Square, has a disturbing dream in which he visits a one-dimensional realm, Line-land, whose inhabitants can*

move only from point to point. With mounting frustration he attempts to explain himself—that he is a Line of Lines, from a domain where you can move not only from point to point but also from side to side. The angry Linelanders are about to attack him when he awakens… Later that same day he attempts to help his grandson, a Little Hexagon, with his studies. The grandson suggests the possibility of a Third Dimension—a realm [reality] with up and down as well as side to side. The Square proclaims this notion foolish and unimaginable.

That very night the Square has an extraordinary, life-changing [transformational] encounter: a visit from an inhabitant of Spaceland, the realm of Three Dimensions. At first the Square is merely puzzled by his visitor, a peculiar circle who seems to change in size, even disappear. The visitor explains that he is a Sphere. He only seemed to change size and disappear because he was moving toward the Square in Space and descending at the same time.

Realizing that argument alone will not convince the Square of the Third Dimension, the exasperated Sphere creates for him an experience of depth…Having had an insight into another dimension, the Square becomes an evangelist, attempting to convince his fellow Flatlanders that Space is more than just a wild notion of mathematicians. Because of his insistence he is finally imprisoned.”[75]

The author, Edwin Abbott, narrates from this Flatlander's perspective.

Edwin Abbott: *“I call our world Flatland, not because we call it so, but to make its nature clearer to you, my happy readers, who are privileged to live in Space… And the necessity of this I will speedily demonstrate. Place a penny on the middle of one of your tables in Space; and leaning over it, look down upon it. It will appear a circle. But now, drawing back to the edge of the table, gradually lower your eye (thus bringing yourself more and more into the condition of the inhabitants of Flatland), and you will find the penny becoming more and more oval to your view; and at last when you have placed your eye exactly on the edge of the table (so that you are, as it were, actually a Flatlander) the penny will then cease to appear oval at all, and will have become, so far as you can see, a straight line… Does this still seem strange to you? Then put yourself in [another] similar position. Suppose a person from*

the Fourth Dimension, condescending to visit you, were to say, 'Whenever you open your eyes, you see a Plane (which is of Two Dimensions) and you infer a solid (which is of Three); but in reality you also see (though you do not recognize) a Fourth Dimension, which is not color or brightness nor anything of the kind, but a true Dimension, although I cannot point out to you its direction, nor can you possibly measure it.' What would you say to such a visitor? Would not you have him locked up? Well, that is my fate: and it is as natural for us Flatlands to lock up a Square for preaching the Third Dimension, as it is for you Spacelanders to lock up a Cube for preaching the Fourth. Alas, how strong a family likeness runs through blind and persecuting humanity in all Dimensions! Points, Lines, Squares, Cubes, Extra-Cubes—we are all liable to the same errors, all alike the Slaves of our respective Dimensional prejudices."[76]

Joseph Campbell: *"That is the hero's ultimate difficult task. How render back into light-world language the speech-defying pronouncements of the dark? How represent on a two-dimensional surface a three-dimensional form, or in a three-dimensional image a multi-dimensional meaning?"[77]*

Ken Wilber: *"This is the major story of our time. Flatland."[78]*

As noted in the previous section, there is a connection between the "divinization of man" (as in Nietzsche's Übermench), the "death of God" (loss of the absolute), zombies, and the Flatland metaphysics which are broadly characterized by meaninglessness—a severing of Heaven and Earth; a disconnection between our immanent, relative experience and the domain of the absolute which is the ground of that experience. It is a metaphorical collapse of three-dimensions (or more) into a two-dimensional plane; and, thus, represents the condition of "shrinking metaphysical distance" of which we spoke. All of this is summed up in the story of Flatland, the story of our time, which depicts the loss of meaning through loss of dimensionality. It is a non-spatial phenomenon made more understandable via spatiality. The true collapse is metaphysical, not physical.

As ontologies evolve and solidify into era-specific worldviews, we come to define the historical and present moments by these views and the cultural-institutional patterns they imply. In the present context, we are particularly interested in the eras called Modern and Postmodern, the two most

recent cultural paradigms (which contain different but related worldviews with discernible commonalities), as well as the Traditional and Archaic worldviews which preceded these. These are the main ingredients which are currently being combined and transformed into something new: The Metamodern era. Understanding this global cultural shift will give us insight into the context of our meaning crisis—because previous eras had their own meaning crises, but our own, situated within metamodernism, is unique.

Understanding each of these eras requires us to examine symbols and myths, for the important reason that symbols eternally point beyond, including and transcending themselves. In some important way, they voice the unvoiceable.

R.A. Schwaller de Lubicz: *"Whether it is a natural or combined image, or a conventional sign, the property of the symbol is synthesis… The symbol is the static form of the relationship between two moments which are incomprehensible in their simultaneity, [and] the juxtaposition of symbols makes possible the expression—without formulation—of identities of nature which can manifest in opposing dualities."79*

D.C. Schindler: *"[Similarly,] an image is volatile by nature. It is not simply a thing lying next to other things, because its own reality does not simply belong to it but lies in part elsewhere. We look through a photograph of a loved one as much as we look at it, in the sense that our attention moves to the person that we know and doesn't come to a stop at the colored shapes on the surface. An image is in a decisive way what it is not. In this respect, we ought to think of an image not primarily as an object, but as a task to be accomplished: it has a goal beyond itself that must be reached, and it is itself constituted by the movement toward this goal. Plato captures precisely this inner tension of images in the Phaedo, where he describes them not primarily as things but as actions, using the verbs…meaning 'to reach out toward' and 'to be eager for'."80*

In this way, Linda Ceriello presents a case that the zombie is not only a symbol of present despair and the collapse of worldviews, but also a bridge back to the very best of humanity.

Linda Ceriello: *"The creators of The Walking Dead have ultimately presented us with a kind of thought experiment: If you knew that all your*

monumental effort just to sustain life might, in the end, still not be enough, could you, like our protagonists, still get busy doing what is needed to care, and to carry on? The characters' struggles with meaninglessness—the kind bred into our postmodern age (and indeed perhaps symbolized here by a zombie apocalypse)—reflect our own… The viewer is ultimately presented with what may be called a more metamodern outlook of embracing the paradox of what it means to survive against such fundamental futilities. That is, with the endless seas of flesh-eating corpses comes a stark undercurrent of understanding about the human condition—that the choice to keep aggressively fighting them off, only to watch more undead rise in their place, is both a Sisyphean kind of ridiculous, and, at the same time, a way of actively choosing life and meaning. Are their efforts naïve? Probably. In the show's reframing of salvation narratives, it turns out that a pretty big dose of a naïve faith in humanity is required, and, the viewer is led to hope, just may save the day."[81]

Ceriello shows how symbols which have been used to convey our despair can be redirected as carriers of hope. However fragile our relationship with hope might be, the only alternative is living-death. This is why TWD in particular exemplifies the quasi-religious hopefulness and sense of goodness which is presently being resurrected. Other (more lighthearted but still salient) zombie fare includes the 2013 film *"Warm Bodies"* and the 2019 television series *"Daybreak"*—relevant here because both play with the boundaries between humans and zombies, and it's there that we have our next clues about our meaning crisis and metacrisis.

Warm Bodies in particular shows the evolving symbolism of the zombie. The film presents two categories of undead: "corpses" and "boneys". Boneys are a zombie's zombie: Somehow more dead, more empty, more aggressive and destructive. This places the corpses in a more liminal space between the boneys' absolute loss of humanity and the humans who face the risk of zombification. *Warm Bodies* opens with the inner monologue of the film's star corpse, who simply goes by the name "R".

R: *"What am I doing with my life? I'm so pale. I should get out more. I should eat better… What's wrong with me? I just want to connect. Why can't I connect with people?"[82]*

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Rather than being a film about a mysterious outbreak which causes strange, cannibalistic behavior, the art and media of our current era take it as a given that the world is full of zombies. The real question is: What now?

Films like *Warm Bodies* have begun to reverse the flow of the zombie outbreak—over the course of the story, the corpses regain their humanity. The titular warmth refers to the personhood-affirming nature of connection and love, which is displayed through simple yet ostensibly radical acts such as holding hands. The hopeful overtones in this latest evolution of zombies' symbolism is, like all images, also a call to action. In the context of our metacrisis, and the meaning crisis it contains, nothing could be more urgent than a story which says: Zombies are us, but we don't have to be zombies. And it implies the idea that as a world we have moved beyond alien invasion mythology, representing a cultural fear-of-the-Other, and into a more mature phase of self-unease.

Carl Jung: *"Coming to terms with the Other in us is well worthwhile, because this way we get to know aspects of our nature which we would not allow anybody else to show us and which we ourselves would never have admitted."*[83]

Affirming that there is a bottomless pit of dark, hopeless, meaningless, cruelty contained within the possibility of being human is equally an affirmation of our moral duty to *"come to terms with the Other in us"* and use it to propel us to greater heights. This fear of our ubiquitous zombie-potential is not misplaced, nor a cause for surrender. It is a natural stage of development; in a sense, we had to become zombies before we could fully realize our humanity. As one of the humans in Warm Bodies says while addressing R, the unusually-human corpse: *"You know, I can see you trying. Maybe that's what people do. You know, we try to be better. Sometimes we kind of suck at it. But I look at you and you try so much harder than any human in my city. You're a good person, R."*

The way out of the zombie apocalypse (or meaning crisis) can't be the same things which caused the initial outbreak of meaninglessness. The way out is to dream again, and never give into the voice which dissuades us from this supremely-human action.

We have arrived at a point where we must begin to reconstruct our broken world, not argue about which part of it is most broken. The hero-philosopher who escapes Flatland (or, similarly, the cave in Plato's myth) and returns with a transcendent treasure must not be imprisoned or killed for the crime of incomprehensibility. The health of a society may be judged by how well it integrates the unknown. And in consideration of the intertwined nature (or even oneness) of subject and object, a broken world and a broken worldview are essentially the same. A worldview births and nourishes purpose, coherence, and significance: The ingredients of meaning. And we tend our worldviews as gardens which require attention and love. Every worldview has its metaphysics, which is what we use to make sense of ourselves, our values, and our actions. It is a shared medium in which our individual choices leave traces and influence our collective future.

The dark side of our consciousness is represented mythologically by zombies, whose defining trait is not just emptiness, but rather a contagious meaninglessness: Metaphysics + mimetic desire. The bite of the zombie is equivalent to human choices which destroy the common ground upon which all life depends, as well as the mimesis that connects humans and other centers of action. Zombieness is metaphysical nihilism and an absence of optimism in its truest sense. And this understanding of optimism shares much in common with moral realism and natural law, which state in different ways that value (or meaning or goodness) is not created so much as it is discovered in its state of absolute possibility, and may be made actual in (or by) centers of action.

David O. Brink: *"Whatever else realists might claim, they usually agree on the metaphysical claim that there are facts of a certain kind which are independent of our evidence for them."[84]*

Russ Shafer-Landau: *"[So] moral realism is the theory that moral judgements enjoy a special sort of objectivity: such judgements, when true, are so independently of what any human being, anywhere, in any circumstance whatever, thinks of them."[85]*

David O. Brink: *"The traditional opponent of moral realism is the nihilist...who denies that there are moral facts or true moral propositions or, as a result, any moral knowledge... The nihilist thinks that moral predicates such as 'good', 'fair', and 'wrong' fail to refer to real properties."[86]*

J. Budziszewski: *"[However], the whole idea of a moral law is that it binds us whether we like it or not. If it really were just a social convention—if we could make it up and change it to suit ourselves, so that we weren't bound unless we wanted to be—then it wouldn't be morality… [It is in this sense that] St. Thomas denies that the basic structure of morality is a construct. It is not rooted in human will and power. Rather it is rooted in nature, in the structure of creation, in the constitution of the human person—in something we cannot change by human will and power. In fact,…[St. Thomas] holds that morality stands in judgment on human will and power. The Good and the Right are not things we invent, but things we discover."[87]*

Richard J. Regan: *"[In other words,] Aquinas…links human law essentially to natural law… This linkage is absolutely essential if human law is to qualify as law at all, that is, to be morally obligatory. And human law, if it departs from the natural law in any way, is no law at all, that is, not morally obligatory."[88]*

John M. Rist: *"[And] if moral realism of a Platonic sort fails, then Thrasymachus or his modern equivalent wins… Without [the Platonic] Forms, moral nihilism…cannot be defeated philosophically."[89]*

Natural Law and moral realism are part of the optimistic orientation; they are opposite to the nihilist's claim that there is no value *per se*, and that any claim to know what is right or good is no more than an expression of personal power and preference. Our view, as optimists, is that meaning is a fact of possibility and a constant of actuality, and worlds differ from one another only in degrees of honesty in their perception-representation (Becoming) of the perfection inherently possible in Being. Asserting our humanity through the construction (or reconstruction) of a viable and optimistic metaphysics is an undeniably urgent challenge in the context of our present metacrisis. Indeed, every crisis within it seems to branch off from the questions which are raised through our standing in the middle of our two orientations.

Nihilism has been winning. It is the dominant and even default orientation; it is gleefully taught in universities and mindlessly instantiated in our politics. We are laying in the shadow of *"The Raven"[90]*, like the protagonist in Poe's poem, but we must nonetheless arise in metarevolution

and heal the inner human experience and outer world, which are unified in their pleasantly insatiable tendency towards meaning and beauty. For all the bitterly cold despair which finds expression in the symbol of zombies, the metamodern era holds the potential for a resurgence of optimism. So, as a bridge between the common worldviews of the zombie apocalypse, and the embryonic worldviews of our metamodern age, we are presently focused on the root causes of our era-specific pathologies; or in other words, asking what was lost, and what must yet be found.

Without this recovery of the optimistic worldview, we will become increasingly zombie-like: Always moving, but getting nowhere. The propped-up corpses of the old worldviews still wander like lost souls—lifeless vessels of something formerly human; dead stars whose dwindling light we still perceive in our sky. This is why we have chosen to spotlight our meaning crisis as the prototypical crisis-which-causes-crises. If the world is spiritually empty, then power and violence would indeed be at the bottom of the metaphysical stack—all values and morality would be window-dressing for an absolutized relativism, and there would be no real justification for attending to one crisis rather than another, or even accepting that there is such a thing as a crisis at all.

D.C. Schindler: *"It is generally assumed that the only way to protect the freedom of the other is to keep at bay any claim to objective or absolute truth, because such a claim seems to lead necessarily to oppression. In fact, the very opposite is the case. Violence and the imposition of points of view is always and in every case the result of a failure to affirm absolute truth in its absoluteness. Tyranny is the identification of a partial view with the whole, and thus an injustice to other parts… The problem with dogmatism is that it is essentially relativistic: by making a particular claim definitive in isolation from the integral whole within which that claim would have its reasonable and sense-giving ground, dogmatism ends up absolutizing the relative… The problem with relativism is that it is essentially dogmatic: by equalizing all perspectives in a wholly undifferentiated manner, relativism makes each perspective in itself a kind of self-contained totality, which is therefore on its own terms incontrovertible and thus definitive."*[91]

No manifesto could genuinely approach justice in that Flatland world —because if value is not real, it can only be created from relative standpoints, of which no two are the same. As Schindler suggests, both dogmatism and relativism are both simultaneously tyrannical and nihilistic—and we are suggesting that optimism is the way out. It is not a "hoping for the best", but a radical metaphysical shift which does not give the final word to the dictates of Power. Power is real, but is not the first principle of reality.

Optimism, as we understand it, is the metaphysical claim that the love story between Value and Action is the most real and most fundamental feature of our world—and that makes it discoverable; possible and therefore actualizable; absolute in a way which includes and implies the relative, rather than relative in a way which excludes and denies the absolute. In the following sections of this book, we will attempt to develop a metaphysics which does not smuggle in nihilism, and therefore provides the grounding for meaningful action.

To begin that task, we need to understand historical eras such as the Modern and Postmodern, which are informing the prevailing feelings, worldviews, and crises of our present moment. Forming in place of the zombified worldviews of these two eras is metamodernism.

Timotheus Vermeulen & Robin van den Akker: *"Metamodernism…is a structure of feeling… [It is] a constant repositioning between attitudes and mindsets that are evocative of the Modern and of the Postmodern but are ultimately suggestive of another sensibility that is neither of them."[92]*

Seth Abramson: *"Metamodernism is variously called a cultural paradigm, a cultural philosophy, a structure of feeling, and a system of logic. All these phrases really mean is that, like its predecessor's modernism and postmodernism, metamodernism is a particular lens for thinking about the self, language, culture, and meaning—really, about everything."[93]*

Hanzi Freinacht: *"Each of [these] is a kind of underlying structure of the symbolic universes that constitute our lived and shared realities."[94]*

Metamodernism, as it pertains to our current area of focus, is a general way of describing a society coming to grips with the loss of meaning and worldviews symbolized by the zombie apocalypse. The historical eras defined

by modernism and postmodernism had ways of feeling and seeing the world which are understandable from our present view, but can now only be considered "undead" rather than truly alive. The grand narratives (including postmodernism's grand narrative that there can be no grand narratives), symbols, myths, and structures of feeling contained in these worldviews no longer serve their core function: Being a shared medium in which individuals become a community and mutually support the discovery and transformation of values, ideas, outlooks, practices, and the whole ecology of patterns which we reciprocally shape and are shaped by.

Naming these cultural epochs is a way of understanding some of the most important questions every generation asks, and the kind of answers we come up with. It is a way to view ourselves. And, different as modernism and postmodernism have been, both, in their own ways, were fatally nihilistic and narcissistic. The metaphysics contained in the worldviews of these eras say that values, goals, and meaning come from "within", and that any other claim is no more than veiled power. Common in these old, broken worldviews, which live parasitically in human hosts, is an ontology of power (i.e. "value" and "meaning" are not real, and rather are versions of, or expressions of, power—the "ultimately real" feature of the nihilistic orientation). Further, modernism and postmodernism have been witness to a pendulum-like swing between relativism (all theories are equal) or absolutism (only one theory is right), and theories of selfhood which tend towards the pathological versions of either individualism or collectivism. This alternation is conveyed mythologically as the "death of God", which is not the death of the Christian "father in the sky" specifically—it is a death of a god, but not The Death of The God.

Mark C. Taylor: *"Throughout the history of the West, God has repeatedly disappeared by becoming either so transcendent that he is irrelevant or so immanent that there is no difference between the sacred and the secular… In monism, God and the gods disappear by becoming indistinguishable from the world—when everything is sacred nothing is sacred. In dualism, God and the gods vanish by becoming so distant that they are inconsequential and thus disposable—when the divine is totally absent, nothing is sacred… Monism and dualism are both theologies of death… To*

overcome this destructive nihilism, it is necessary to cultivate emergent creativity in complex adaptive networks that figure, disfigure, and refigure what once was believed to be the substance of things seen and unseen. Always after God, the endless restlessness of the Infinite is the eternal pulse of life… The Infinite, then, has two [interdependent] rhythms: finitizing the infinite and infinitizing the finite."[95]

Metamodernism, from this high-level overview, is the mediation of our past, present, and future relationship to the sacred and the real. It is a constellation of emerging worldviews which embody the movement between the finite and infinite—including and transcending the monisms and dualisms of the past. It is a unity of opposites, a marriage of Heaven and Earth, a cycle of birth-death-rebirth which is so well-known in the "Hero's Journey" of mythology, but tragically absent in the way we approach life in general.

Joseph Campbell: *"The mythological hero, setting forth from his common-day hut or castle, is lured, carried away, or else voluntarily proceeds, to the threshold of adventure. There he encounters a shadow presence that guards the passage. The hero may defeat or conciliate this power and go alive into the kingdom of the dark (brother-battle, dragon-battle; offering, charm), or be slain by the opponent and descend in death (dismemberment, crucifixion). Beyond the threshold, then, the hero journeys through a world of unfamiliar yet strangely intimate forces, some of which severely threaten him (tests), some of which give magical aid (helpers). When he arrives at the nadir of the mythological round, he undergoes a supreme ordeal and gains his reward. The triumph may be represented as the hero's sexual union with the goddess-mother of the world (sacred marriage), his recognition by the father-creator (father atonement), his own divinization (apotheosis), or again —if the powers have remained unfriendly to him—his theft of the boon he came to gain (bride-theft, fire-theft); intrinsically it is an expansion of consciousness and therewith of being (illumination, transfiguration, freedom). The final work is that of the return. If the powers have blessed the hero, he now sets forth under their protection (emissary); if not, he flees and is pursued (transformation flight, obstacle flight). At the return threshold the transcendental powers must remain behind; the hero re-emerges from the*

kingdom of dread (return, resurrection). The boon that he brings restores the world (elixir)."⁹⁶

The failure of old worldviews to undergo the archetypal death-of-self and rebirth-into-higher-self has led to our zombie apocalypse, which now looks like a cruel joke, or pseudo-rebirth. Even the characters in *The Walking Dead* seem to get it: *"I can't profess to understand God's plan, but Christ promised a resurrection of the dead. I just thought he had something a little different in mind."⁹⁷*

It is the project of metamodern metarevolutionaries to provide a viable alternative to meaninglessness, which requires a negotiation between potentially opposing (and potentially complementary) poles like relativism and absolutism, science and religion, East and West, and so on.

Joseph Campbell: *"The pairs of opposites (being and not being, life and death, beauty and ugliness, good and evil, and all the other polarities that bind the faculties to hope and fear, and link the organs of action to deeds of defense and acquisition) are the clashing rocks that crush the traveler, but between which the heroes always pass."⁹⁸*

Living in our metamodern era means passing, heroically, between opposites, and emerging beyond the Traditional, Modern and Postmodern worldviews which have outlived their purpose.

In the context of the Flatland in which we currently find ourselves, metamodernism is an ecstatic mode of being—a leap to a new dimension. As we break the spell of nihilism and rediscover optimism, we will remember that meaning is real; some things are more meaningful than other things; and ambivalence towards its discovery and transformation leads inexorably towards the living-death of the zombie apocalypse. Metamodernism challenges us to become our true selves, to become more whole, and to discover the goodness which, in its state of absolute possibility, is ready to be brushed onto the canvas of actuality.

Visually, metamodernism is the way of the spiral, the symbol of the journey which continually includes and transcends itself without forgetting its center. It is like Aker, the Egyptian god depicted as twin lions balancing a red sun: A unity of opposing, paradoxical tendencies.

Zak Stein: *"The metamodernist has her own unapologetically held grand narrative, synthesizing her available understanding. But it is held lightly, as one recognizes that it is always partly fictional—a protosynthesis."*[99]
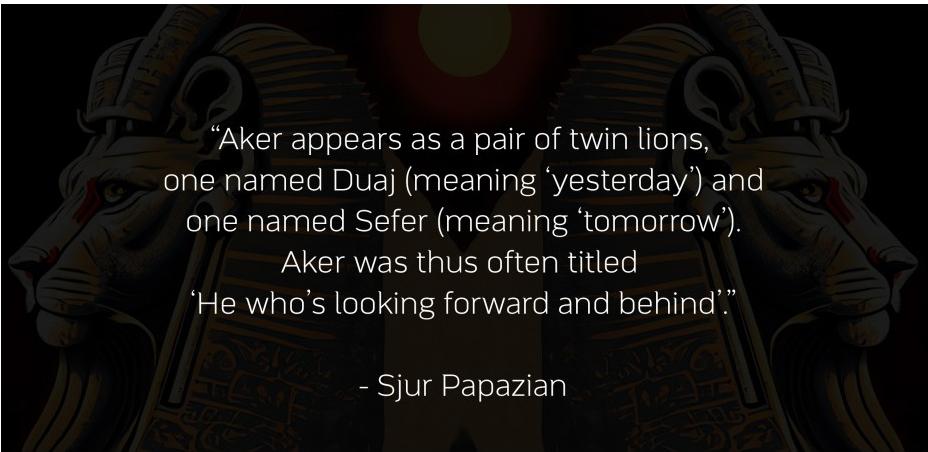
"Aker appears as a pair of twin lions,
one named Duaj (meaning 'yesterday') and
one named Sefer (meaning 'tomorrow').
Aker was thus often titled
'He who's looking forward and behind'."

- Sjur Papazian

A metamodern "protosynthesis" of grand narratives has elements of the old, but as a reconstruction also forms a new whole with different qualities than those of its parts. A defining difference between the postmodern and metamodern eras and their overarching modes of feeling/seeing/being is that deconstruction is no longer the focus. It exists in the metamodern worldview, which includes and transcends its predecessors, but is replaced with a tentative reconstruction of meaning, values, and worldviews.

Seth Abramson: *"In the early 2000s, a scholar from New Zealand, Alexandra Dumitrescu, analogized metamodernism to 'a boat being built or repaired as it sails,' and it's precisely this sort of reconstruction that metamodernism permits—a manner of construction in which we simultaneously acknowledge that things are still in pieces, but also that the pieces we have must be treated as useable even if we still have some doubts about that. A metamodern 'reconstruction' is not merely a 'construction' because it recognizes that we are trying to 'repair' something that was previously deconstructed; and it's not a deconstruction because we are, however cautiously and skeptically, setting about trying to build a 'whole' object."*[100]

All creatures, including humans, exist with the same kind of generative tension—a balance between exploration (finding the new in the unknown) and exploitation (using what you found). Life exists as pockets of order within a sea of disorder; and yet it thrives at the edge of that chaos. Such is the structure of feeling that metamodernism embodies.

John Dourley: *"As such, life is always a triumph of the power of integration over against the tendency to disintegration and nothingness. Life as integration triumphant and disintegration defeated is evident in all of the major opposites Tillich introduces in his work but is dramatically so in his depiction of the conflict between power and meaning. The most general work of the Spirit as the unifier of opposites is to unite power and meaning and so to foster life."*[101]

Too much exploration of the unknown doesn't leave enough room for exploitation of already-explored territory—or in other terms, synthesis of the best-available information. In a similar sense, the "lightly held" grand narratives of metamodernism seek to reconcile our need for worldviews (order) with their vulnerability to corruption and tendency to become dogmatic or ossified. And so we embody just enough order that we may remain intimate with chaos.

If we wish to be metamodern metarevolutionaries, we must orient ourselves towards creating and refreshing new worldviews in which there is a common (non-relative) understanding of goodness, truth, love, and freedom. We must carefully wield the power of storytelling, mythology, symbolism, religious perspectives, and the transparent, generative blending of fact and fiction. The second half of the book will use these as components of the processes of transformation that exist in all complex systems. To further illustrate what marks the turn towards metamodernism, we may say that of the above, large parts of the world are currently particularly out of touch with the mythological/symbolic/analogical way of seeing—which is to say we've lost touch with imagination in the truest and most serious interpretation of that word.

Jordan Peterson: *"Mythological thinking is not mere arbitrary superstition. Its denigration—cascading even through literary criticism, in recent years—is not only unwarranted but perilous. This is not to say that*

religious institutions and dogmas are not prey to the same weaknesses as all other human creations. The ideas and patterns of action that underlay and generated those institutions remain of critical importance, however—remain important for sustaining individual emotional stability, maintaining group tolerance, cohesion and flexibility, supporting capacity to adapt to the strange, and strengthening ability to resist domination by one-sided and murderous ideologies."[102]

Mythology is the landscape we pattern with sacred symbols, which in turn pattern the landscapes in our minds. But at the time of writing, postmodernism's distaste for metaphysics and modernism's lingering mechanical-scientific worldview are interacting to shape a society that is uniquely out of touch with What Is—which is a space most readily expressed by way of symbolic language and analogy: These being forms of language which point at one thing, but express meaning beyond that thing. All symbolism, mythology, and art is a striving and reaching towards a transcendent absolute: the spiritual plenum of value that is sometimes pictured as a separate world, but is our very actuality and concurrent with every experience within it. A plenum being a space completely filled, and the content of a spiritual plenum being value (and thus meaning, beauty, wisdom, and love), mythology and its symbolic language express the "beyond" that is not truly beyond, but right here.

Gottfried Leibniz: *"Thus there is no uncultivated ground in the universe; nothing barren, nothing dead."[103]*

The myth of the zombie apocalypse expresses the death and decay of our moral duty to discover the immortal value in our universe—as an eternal possibility that can and must be actualized. Myths, whether Homer's *"The Odyssey"* or Tolkien's *"Lord of the Rings"* can't be read simply as a series of events (narratively). They require a perspective, the symbolic and analogical lenses, which were at times commonplace, but at the present time must be reconstructed and given new life.

Patrick Harpur: *"Analogical 'thinking' is the way in which imagination chooses to structure itself. It is also a fundamental characteristic of imagination's primary products: myths. By understanding something of how myths work, and according to what rules, we shall understand better how*

imagination works and therefore what the human soul is like… Mythical events were not thought to have literally happened; yet in another sense they were true, as if they had. 'These things never happened; they are always', wrote Sallust sublimely. Conversely, historical events are always mythologized (the Trojan war, for example). It is as if what literally happened is less important than what metaphorically happened. But the two are combined to create what 'really' happened."[104]

Carl Jung: *"[So we can observe that] myth is not fiction; it consists of facts that are continually repeated and observed over and over again. It is something that happens to man, and men have mythical fates just as much as Greek heroes do. The fact that the life of Christ is largely myth does absolutely nothing to disprove its factual truth—quite the contrary. I would even go so far as to say that the mythical character of a life is just what expresses its universal human validity."*[105]

So, what is "really" happening involves both the scientific, literal perspective as well as the mythological perspective. Again, the words used to describe the latter may initially strike people today as strange, archaic, or childish. But at various points in history, concepts like Forms, Archetypes, Daimonic Reality, Otherworld, Fairy World, Anima Mundi, Double-vision, or Imagination would have been readily understood. It is a tragedy and crisis of our age that we have allowed the Real to be murdered by the Literal.

Patrick Harpur: *"The parallel world of the Irish fairies was, for Yeats, synonymous with 'imagination.'… A whole world, peopled by fierce daimons, which has a life of its own… The only concern of the Primary Imagination, wrote another poet, W.H. Auden, is with sacred beings and events… Auden's sacred beings and events are our daimons, archetypal images which Imagination generates… It must be emphasized that Imagination in the poetic, Romantic, true understanding is pretty much the opposite of what it has come to mean—something unreal and invented, what Coleridge called 'fancy'… Imagination…spontaneously produces those images—gods, daimons and heroes—who interact in the unauthored narratives we call myths… This view of a mythopoeic—a myth-making— Imagination is so foreign to all but the most Blakean of us that it may help further to return to its prototype among the Neoplatonists… They…recognized*

a whole daimonic state, partly physical and partly spiritual, which mediated between our sensory material world and the spiritual or 'intelligible' world of Forms… This intermediate world was called Psyche tou Kosmou, the Soul of the World—although it was better known in Latin-speaking Europe as Anima Mundi… To see with the eye alone is to see the world as if in single vision, as two-dimensional only, as literal. To see the world through…what Blake called 'double vision', which perceives in greater depth, beyond the literal to the metaphorical…sees the sun…also as a heavenly host. We need double vision to see daimons—to see that they are real, but not literally so. Unfortunately we have become so literal-minded that the only reality we recognize is literal reality which, by definition, rules out daimons."[106]

Metamodernism marks the end of life in Flatland. Its general orientation is movement towards the worldwide reconstruction of worldviews which include the past, transcend the present, and continually adapt to the future. Metamodernism is also a worldwide return of the philosopher, the return of metaphysicians, and a moment of nonlinear and discontinuous personal-cultural transformation which will give birth to a new synthesis of worldviews. Our new direction values the scientist, artist, shaman, psychologist, doctor, saint, and alchemist alike, and sees their work as a complex system—that is, as inextricably connected and co-evolutionary, and all ultimately pointing towards the actualization of perfection, a sort of Holy Grail: Unobtainable in totality, but obtainable in degrees by way of accepting the quest to pursue it.

As with the reference above to the Holy Grail, many today can still recognize elements of the Hero's Journey, made famous by Joseph Campbell. But most are unaware of its connection with ancient shamanic practices—such as the "ecstatic trance" or "flight of soul".

Patrick Harpur: *"When Joseph Campbell…analyzed hero myths from across the world, he identified many universal elements, such as the call, summoning the hero to his adventure or mission; his reluctance or refusal; his acceptance and setting out; his crossing of the threshold into an Otherworld; encounters with supernatural helpers; his ascent or descent; his initiatory trials and ordeals, notably his 'death' by being dismembered or devoured; his resurrection and return with the treasure—the healing herb, elixir of life,*

Golden Fleece or Holy Grail. This is also essentially the pattern of the shaman's otherworld journey.''[107]

Ira Progoff: *"[Similarly,] Eliade has demonstrated the importance of the ritual event of initiation in which the death of the individual and his rebirth are symbolically enacted. He has shown that whether it is the initiation of a teenage boy into the mysteries of the hunter group, or the initiation of a medicine man into the higher mysteries of the tribe, the goal is a transformation of consciousness that enables the initiated one to enter a larger dimension of reality.''*[108]

The hero is the mythological revolutionary, and the revolutionary is the literal hero—they are reflections of each other. Metarevolution is metaheroism—a coherent, organized complex of revolutionary action. We can only allude to it now, but we will explore exactly these kinds of things in the second half of the book because, although, modern stories like *"Star Wars"* were based explicitly on Campbell's work (which revealed the common patterns of heroism in all times and places), we have made ourselves spectators of this reality, rather than participants. That is what is meant by "loss of soul"—it is a disconnection between literal and mythological revolutionary-heroes. To save ourselves and the world, then, requires actions which produce symbols/myths, which in turn guide actions, and so on in an infinite feedback loop.

It's one thing to have these things woven into our cultural stories, and quite another to consider them part of a sacred, collective space of our consciousness (or soul)—a mythological mirror which reveals truer and truer versions of ourselves as we gaze into it.

Patrick Harpur: *"Who knows what other worlds are possible for the truly daimonic human—the legendary shaman, the Zen master, the Taoist sage, the Christian saint, the visionary artist?"*[109]

Metamodernism, seeking to answer this question, therefore recognizes the absolute necessity of understanding how the processes of transformation require simultaneous action in "multiple worlds" (which can also be thought of as the "material" and "spiritual" aspects of the same world). And, in addition to reconnecting these worlds (making them more like two sides of one coin), it is equally important for the resolution of our meaning crisis and

metacrisis that we have the "right" heroes. Mythological heroes like Hercules still reflect our "literal" world's most common way of relating to the "Otherworld"—which is to say that the dominant worldviews of today denigrate the mythological-symbolic realm, dismiss metaphysics (resulting in life in Flatland, and Power's rise to ontological supremacy), and thus undermine the basis for generating new myths and symbols which affirm a healthier relationship between domains of reality.

Patrick Harpur: *"The classical hero has one divine parent. He is half man, half deity. When the gods are done away with, the divine half of man is assumed wholly by the human half."*[110]

This is what has been called the death of God, but is really the death of the purely transcendent, absolute God and the divinization of the immanent God (the God-man or Übermensch[111]).

Patrick Harpur: *"Psychologically, we say that the ego suffers an influx of unconscious contents which it is unable to accommodate unless it drastically inflates itself, arrogating to itself archetypal powers that should be held at a distance because they are the property of the gods... Heracles (or Hercules) cannot bear daimons or images. He cannot think about death. His twelve labors are largely taken up with slaughtering or enslaving the fabulous beasts that embody the otherworldly powers of imagination... His attitude to the Underworld, so crucial in understanding any relationship to soul, is what would now be called dysfunctional. Where other heroes go to be initiated or instructed, Heracles goes on the rampage. Club in hand, he forces Charon to carry him across the river Styx. On the other side, the shades of the Dead flee from him in terror, just as our dream images flee from us when we wake into our rational egos... Finally, he drags the guardian of Hades, the three-headed dog Cerberus, up into the daylight world where it does not belong. Heracles seems unable to imagine. 'Rather than die metaphorically, as initiation demands, he kills literally, even attacking death itself', writes Hillman. The lack of initiation is disastrous. It means that Heracles remains a daimon-killer, constantly denying the imagination, the Underworld and death."*[112]

The Ego seeks wholeness: The individuation of the Self; the part's striving to embody the whole. The "Heraclean" or "Herculean" Ego is that which rejects the Otherworld, and thus projects this separation as a

mythologically-expressed Shadow: the zombie. The monster is perceived as external until, upon reflection, it becomes clear that it is only the outward expression of a deeply unmet need for meaning, and a dysfunctional relationship to this Otherworld—that realm of symbols, creativity, imagination, and the transformative chaos which incubates new life.

The point is, whether we are talking about a kind of modernist scientific worldview with an ontology which, like Hercules, is wildly out of touch with whole regions of reality, or the incoherent postmodernist tendency to reject hierarchies of all kinds, there are no shortage of Flatlander worldviews which metamodernism must learn from and, ultimately, move beyond. The mood of metamodernism is the joyfully uncertain, constantly creative, incubative striving to unify the unresolvable tension between pairs of opposites—to build a structure of "tensegrity".

Matheus Pareira: *"Buckminster Fuller created the term 'tensegrity' to describe 'self-tensioning structures composed of rigid structures and cables, with forces of traction and compression, which form an integrated whole'... It creates an interconnected structure that works biologically like muscles and bones, where one element strengthens the other."*[113]

John Wild: *"[It describes, literally and as analogy,] an order of divergent tendencies which on the whole support one another."*[114]

Heraclitus: *"The cosmos works by harmony of tensions."*[115]

This, again, is a common thread between the feeling of metamodernism and the action of metarevolution. From modernism's certainty and postmodernism's skepticism, we arrive at metamodernism's lighthearted seriousness and tragedy-tempered sense of hope. Through the last century, we have (hopefully) learned what it is like to live through a zombie apocalypse—a world with no viable worldviews. So our starting point is now this mode of pragmatic reconstruction which recognizes that we can't exist as islands of meaning, and that being human always includes self-transcendence, or stepping outside of ourselves. Even more broadly than the matter of what today's common worldviews leave out, we need to consider generally how urgently we need optimism in its true sense (and the cultures which embody them) to fulfill the moral duty of being human. How might one person remain whole and yet find greater wholeness in community with others? How does

one create a healthy, dynamic, generative balance between self-assertiveness and self-transcendence—between the center of action called the Soul, and the center-of-centers called the World Soul?

Scott Barry Kaufman: *"Indeed, so many people today are striving for 'transcendence' without a healthy integration of their other needs—to the detriment of their full potential. This ranges from people who expect a mindfulness retreat or yoga class to be a panacea for their traumas and deep insecurities, to spiritual 'gurus' abusing their positions of power, to the many instances of vulnerable people (especially vulnerable young people) seeking unhealthy outlets for transcendence, such as violent extremism, cults, and gangs. We also see this at play among the many divisions we see in the world today. While there is a yearning to be part of a larger political or religious ideology, the realization of this yearning is often built on hate and hostility for the 'other,' rather than on pride and deep commitment for a cause that can better humanity. In essence, there is a lot of pseudo-transcendence going on."*[116]

Aldous Huxley: *"Moreover, when pseudoreligions with a strong emotional appeal make their appearance, they immediately win millions of enthusiastic devotees from among the masses to whom the real religions have ceased to have a meaning or to be a comfort."*[117]

Heinrich A. Rommen: *"They wanted something to live for, but they had lost the causes of life and did not know what to do with it. They grew tired of the individualist and autonomous ethical culture of their fathers and that serene egocentrism which appeared so utterly foolish… The horror vacui drove them to the new myths of quasi-religious collectivism, whether racial, economic, or national in its irrational transcendency… So the myth-making pseudo-religious political creeds…succeeded in conquering souls. Thus the new political philosophies show that their deepest roots are in a specific idea of man as an unfree particle of the masses, depersonalized, without individuality, self-responsibility, or individual reason and conscience. Whenever the religious sphere becomes empty, whenever the belief in man's individual reason and consequent self-responsibility disappears, the dignity of man disappears, too."*[118]

Understanding of selfhood (one of the major features of any worldview), is itself a crisis within our meaning crisis and metacrisis. And today, people seem to have just two terrible choices in ideologies (or pseudoreligions): The disturbingly empty, fracturing, unempathetic individualist ones; or the dehumanizing, suffocating, all-coercive collectivist ones. A focus in the second half of this book will be discovering ways to form a generative unity of opposites between pathologically individualistic and collectivist tendencies, which is a mirror image of the resolution that must occur between the immanent and transcendent God, so that we may finally stop killing Him; or, to demythologize, we must understand the nature of the Good, which is both absolute and relative. Without value *per se*, there is only "valuable for me"—which is optimism's implosion into nihilism.

D.C. Schindler: *"Liberation, in other words, is the movement from a sheer 'self'-centered view of reality to a bonocentric view."*[119]

Donald Rutherford: *"For a will to be free is for its choice to be determined by a knowledge of the Good."*[120]

D.C. Schindler: *"To put it another way, it is a movement from the reduction of a thing to its relation to me, to seeing it as existing in its own right, as Good in an absolute sense."*[121]

The path leading out of our meaning crisis is marked by metamodernism's cultural shifts in feeling/being and newfound openness to grand narratives, values, and meaning. We've seen that we do not get to "shut off" this part of reality: The vacuum of meaning is automatically filled with zombies (which, you'll remember are "placeholders" of meaning, implying that the available space for meaning to be actualized must necessarily decrease in proportion to their prevalence). The now well-known devastation happening in our natural environment must be contextualized with knowledge of an equally scourged Otherworld—that realm which speaks to us in symbols and myths, and is currently showing us our Shadow in the risen-but-soulless bodies of zombies.

Having become detached from the Otherworld and from past sources of transformation and self-transcendence, such as traditional religions, there is an increasingly misplaced appetite that arises from the decreasing metaphysical distance between perceiving-subject and love-object. In other

words, when the "transcendent God" is killed (and humanity begins to model Hercules' violently detached relationship with the Otherworld), He becomes an entirely "immanent God"—and human self-transcendence and development are arrested. When meaningfulness is said to begin and end in the individual, and the idea that we must reach beyond ourselves to become fully ourselves is wholly rejected, we are rejecting the depths of soul and the heights of spirit. But we must learn to mediate between these domains of reality and humanity. Self-transcendence is an undeniably important part of being human, and in its healthy form is not something that takes over individuality, but rather contributes to individual wholeness.

To summarize, our meaning crisis and loss of worldviews is adding fuel to the fires of our metacrisis as a whole. And one symptom of this is that unhealthy forms of transcendence, as in the inculcation to an extreme political ideology which erases the wholeness and "end-in-himselfness" of the individual, are emboldened by a lack of healthy alternatives. Unhealthy self-transcendence destroys freedom and the wholeness of individuals. And this is an area of our metacrisis which can't be ignored. The escape from our meaning crisis is also, necessarily, the perfection of freedom and love. As metarevolutionaries, we will need to construct worldviews which do not parasitize (dehumanize). And metamodernism is the name for the ecology of worldviews which is emerging to face exactly these challenges we've been exploring.

The way of seeing/feeling/being encapsulated in the spirit of metamodernism allows us, even while staring down a terrifying zombie apocalypse and metacrisis, to find the strength to act.

Seth Abramson: *"Theorists describe this way of thinking as an 'as if' philosophical mode; that is, the metamodernist chooses to live 'as if' positive change is possible even when we are daily given reminders that human culture is in fact in a state of disarray and likely even decline."[122]*

We can be sure of neither our survival nor our extinction in the coming decades. But our overarching goal is to make life as good as possible, for as long as possible. And this, as we've said, requires transformation of world and worldview in tandem. Where the old, undead worldviews keep us trapped in Flatland by offering metaphysics in which Meaning and Beauty are

said to be nothing but the ontological children of Power, metamodern worldviews seem to be leading towards the rediscovery of meaning. The escape from Flatland, the resolution of our crisis of meaning, and the ritual shutting of the door to nihilistic power-ontologies, begins with addressing ourselves to the Good itself, which is the absolute first principle of every action. There can be no change without belief in each other, and no reason for change without value-ontology—which is to say, belief in the Good.

1.1.2

THE GOOD

"The roots of all goodness lie in the soil of appreciation for goodness."[123]

- Dalai Lama

We have so far said that something essential to humanity has been lost, and there is a wound at the core of the world's dominant worldviews. We have lost the Good.

We can now go deeper into our metacrisis, having explicated the metaphysical sickness to which zombies correspond: nothingness, valuelessness, meaninglessness. And, in contradistinction, we have started to see what the resolution of our meaning crisis might entail. Because this is a metarevolutionary manifesto, and not just a revolutionary or political manifesto, the journey which resolves our meaning crisis will also be our entry into broad metarevolutionary principles. In other words, what we learn about the love between Value and Action in the following sections of this book will apply equally to our meaning crisis, and to any metacrisis in any time or place. Thus, the remainder of the first half of the book will deal largely with the features of complex systems, for that is what a metacrisis (or a metarevolution) is. These features, when ignored, are recurrent points of failure in the effectiveness of action; and, when attended to and comprehended, recurrent inroads into the transformation of action (and/or action-centers) towards greater complexity, consciousness, and coherence.

Before we get to that, though, one might still ask how we could have lost the Good. We can point to many "good things", can we not? But it is a different claim entirely that we have lost the Good, which is metaphysical possibility, and the first principle of all good things in their relative actuality. A meaning crisis or zombie apocalypse is not the failure to maximize happiness or achieve great wealth or any other such notion. A meaning crisis is closer to a "death of God" experience, in which the underlying conditions of meaningfulness collapse; it is closer to Earth being thrown out of orbit, severed from the Sun's energy and plunged into darkness.

This is why we have said that every manifesto is metaphysical, as is every choice, however minuscule it might seem. In the second half of the book, we will even relate this to the idea of "sacred architecture" and the beauty of our cities—because what we create from material is always a reflection and embodiment of the spiritual. We will see that architecture is a psychological, religious concern. But before we get there, to such contextual implications, we must approach things from the other side, from metaphysics.

And we shall argue that the Good is the metaphysical first principle of everything, and indeed can be the only non-nihilistic first principle. We will see that optimism is the belief that the Good is discoverable—and that this is a crucial distinction to such common turns-of-phrase like "meaning making", or even the in-built assumptions of our modern concept of freedom.

We must deal with this zombie problem. But there is no implication of violence here: It may seem straightforward to kill zombies, and thereby end the zombie apocalypse, but our mythological lens begs to differ. The absolutizing of power/violence is what creates zombies, despite the temptation to "fight fire with fire". The countervailing force of the zombie apocalypse is love, not power; optimism is the only medicine for nihilism.

The concern that naturally presents itself, when we hear "absolute Good", is tyranny—the imposition of someone other than you deciding what is good for you; some overpowering, totalitarian force deciding what is ultimately and supremely good for all; that we are objectifying ourselves—submitting our individuality to some superindividuality, of which we are slave-like parts of its all-encompassing mechanization. This is not what is meant here; we shall not commit the "structuralist fallacy" or any variation of what could be called pathological collectivism.

Mark C. Taylor: *"Instead of individuals creating systems that were subject to their control, systems [in the structuralist view], it seemed, were creating individuals by situating them in networks and structures that regulate all exchange. Far from a center of action, the subject appears to be a function of the system or structure it constitutes. When understood in this way, structuralism is the philosophical reflection of a seismic techno-social shift. By arguing that systems constitute individuals more than individuals create systems, however, structuralists commit the opposite error of existentialism: whereas existentialism privileges the individual over the system, structuralists privilege the system over the individual."[124]*

Heinrich A. Rommen: *"All these attempts…lead to the devaluation of the individual person, to its instrumentalization by a supra-individual substance and hence to the destruction of individual free will and individual responsibility, to the utter demoralization of social life."[125]*

We can overcome these issues, and it begins with a recovery of the Good and the understanding that it is absolute in a way which is inclusive of the relative. The Nietzschean "death of God" as Mark C. Taylor argues, is part of an ongoing "seesaw" between all-immanent and all-transcendent (monist and dualist) metaphysics; a fluctuation wherein we currently find ourselves in the labyrinth of relativism, where the transcendent (beyond) has been entirely lost. This is the zombie worldview—i.e. nihilism. When there is no absolute Good to which relative goods can point, Value *per se* devolves into "valuable for me". From Plato to Leibniz, we find that the highest form of Good (and Love) is ecstatic and agapic—i.e. it connects the absolute and relative in lightning-like moments of hierophany, and good for me precisely because it is good for all, including me. The best of love is that which makes love most universal—love which supports the underlying conditions of love.

D.C. Schindler: *"Aristotle recognizes only two senses of good—(1) things good in themselves and (2) things good as a means to those—compared to Plato's three categories. Aristotle's view effectively separates the senses of goodness into a sharp dichotomy: we choose a thing either because it is intrinsically good or because it is instrumentally good. Though he affirms this difference, Plato at the very same time refuses to make the dichotomy absolute and allows a third possibility, a 'both/and.'... This central class of good clearly represents the most comprehensive form, which simultaneously allows and overcomes a distinction between an intrinsic good and its extrinsic benefits. To put the issue in more technical terms, we could say that both Plato and Aristotle distinguish between goodness in an absolute sense (in itself), and in a relative sense (in relation to an extraneous benefit), but that Plato goes on to designate a third sense of goodness that is absolute in a manner inclusive of rather than exclusive of the relative."*[126]

The Good is the first principle of everything. It is the entire content of what we call "possibility" or "the absolute"; and goodness-in-action is the entire content of what we call "actuality" or "the relative". Action (as a term including power, energy, Will, Deed, perception, appetition, change, differentiation, transformation, and more) is the Good's first Form, which then informs all others. Action is the first emissary of the Good. This claim, stated

from metaphysical first principles, can also be stated from the foundational principles of physics—in which action is the building block of everything.

Christoph Schiller: *"In 1899, Max Planck discovered, in his measurements on light, the existence of what he later called the 'elementary quantum of action'. An 'elementary quantum' is an indivisible smallest entity. Planck's discovery and his choice of terms gave 'quantum' theory its modern name… Action measures change…[and] is the most fundamental quantity in physics... The quantization of action thus implies that in nature, change occurs in small steps."[127]*

Georgi Georgiev & Iskren Georgiev: *"[And] Pierre de Maupertuis…in 1750 stated the law of the least action as a 'universal principle from which all other principles naturally flow.'"[128]*

Arto Annila: *"[Thus,] the principle of least action provides a holistic worldview in which Nature in its entirety and every detail is described in terms of actions."[129]*

The Good itself is the possibility of perfection, and Value *per se*, which we experience as the endlessly new music of actuality, played by the centers of action—an orchestra of souls—which compose it. This is optimism. It is belief in the absolute possibility of the Good, and the conviction that our actions may influence the unfolding of its actuality. It is the only alternative to nihilism, which places Power in this supreme position. Optimism is the belief that these "two worlds" of the absolute and relative are in fact two sides of a coin—which means that the "transcendent beyond" is here with us, and human experience happens within a naturalistically spiritual plenum.

Iris Murdoch: *"There is nowhere else, it is all here."[130]*

Eric Perl: *"[This means that what] Plato presents in the middle dialogues…is not two worlds, a world of sensible instances on the one hand and a world of transcendent forms on the other, but rather one world, that of intelligible form, and the appearances of that world which constitute sensibles. It is this understanding of the properties of instances as appearances of the forms that enables us to reconcile immanence and transcendence. The form is in the instance in that it appears and may be cognized here, in this particular association, as the property of this instance; and it is transcendent, that is, is not itself conditioned by the particularities of*

this or any other appearance and can be known apart from them. Since the same form may be apprehended as it is, as one, itself by itself, or as it appears, as many, as the property of each of the instances, it is both transcendent and immanent. The transcendence of the forms, then, so vividly presented in the middle dialogues, is not the separation of one world, one set of objects, from another, but is rather the priority and independence of intelligible reality in relation to the sensible appearance of that reality, and is thus a transcendence which does not contradict but rather both implies and is implied by immanence."[131]

D.C. Schindler: *"[Which brings us to an understanding of] the paradoxical twofold nature of the Good: its absoluteness is not exclusive of, but necessarily inclusive of, relativity… In other words, relation to the absolute, properly conceived, does not simply eliminate what is relative or partial. If it did, then the absolute and relative would exist as competing members of the same class, as it were, and the absolute would thereby cease to be what it is. Instead, what is relative and partial gets integrated into an order that both transcends and includes it and it thus acquires a necessity it would otherwise lack."[132]*

Eric Perl: *"As soon as we recognize that the forms are the universal intelligible natures of sensible particulars, we are able to break free from spatial metaphors, from thinking of immanence and transcendence in terms of the local presence or separation of one sensible thing to another. Thus the apparent opposition between them disappears. Where, among all the beautiful things in the world, is beauty? Everywhere and nowhere: everywhere, because wherever a beautiful thing is, there is beauty, as a property which it has and by which it is beautiful; nowhere, because we cannot point to any one of them and say, 'There it is!' as if it were identical with or confined to that one instance… Physical, sensible things have and display incorporeal, intelligible natures which transcend them, and only by having such transcendent principles present in them as their properties or determinations do they have any intelligibility, any identity, any reality at all… The ascent from the world of sense to the place of the forms is not a passage from one reality to another, but a cognitive ascent from appearance to reality, from the apprehension by*

sense of the many appearances, to the apprehension by intellect of the one form which is appearing."[133]

Iris Murdoch: *"[This means that] Plato's Forms, as objects of moral desire, and principles of understanding, are to be thought of as active creative sources of energy in the world, but are mythically pictured as separate and transcendent; they cannot be relativized by being absorbed into (historical or psychological) transformations of existence."[134]*

Eric Perl: *"[Yes, and] as incorporeal, changeless, intelligible realities, the forms remain as transcendent to the world of physical, mutable, sensible things as the strongest proponent of separation could maintain. But this transcendence must not be conceived in dualistic terms, as the positing of another world over and above sensible things, an additional set of beings located elsewhere. The fundamental point of Plato's theory, rather, is that transcendence is not elsewhere but in our very midst. What is present in sensible things, as their properties, is transcendent form. The presence of the forms in their instances implies that our experience is shot through with intelligible ideas, with thought-contents. In one sense, we cannot see the forms: they are not themselves objects of the senses. In another sense, we never see anything but forms: they are the very 'looks' which our sense experience is always presenting to us, what is present in it for the mind. The forms are separate, not here, in the world experienced with the senses, in that they are not members of it; but they are here in that they are the very natures which sensibles things have and display. And it is in this sense that everything we encounter with our senses is not reality itself but an image, an appearance, a presentation, of the intelligible, eternal, divine reality."[135]*

Iris Murdoch: *"[This] double nature of the Forms, being both immanent and transcendent, [means that what]…is ideal is active in the imperfect life, and yet is also, and necessarily, separate from it. This separateness is connected with the possibility of freedom and spiritual movement and change in the life of the individual."[136]*

What follows from this is optimism: The belief that reality is the unbreakable connection between the actual and the possible, the marriage of the relative and absolute, and a permanently entwined complex composed of the immanent and transcendent. And therefore, what we experience may be

called a spiritual plenum (or pleroma or plenitude)—a place where everything is the body of the Good. All of this is to say that if the "beyond" is here—if the Good is absolutely sovereign, yet always present in Action—then optimism is both the orientation of seeing value everywhere, and the moral duty to lovingly connect Action to Value in such a way that leads to the greatest actual perfection. Our optimism is the belief that everything is a complex, loving mixture of Value and Action; that meaning is real, discoverable, and present everywhere; and that morality is nothing other than the good use of energy in the actualization of perfection.

Owen Barfield: *"[So] let us begin by assuming straightaway not merely that matter is a form of arrested physical energy, but that Leibniz was right when he propounded that matter is coagulum spiritus—a kind of coagulation or concentration of spirit—that the material is formed from and within the immaterial, rather as ice is formed from and within water."*[137]

Value is. Wisdom and Beauty are its symbols. Morality and Justice are the Good's actualization through its psychopomp, Love.

It is inescapable, then, that discussion of the meaning crisis within our metacrisis would lead to Value itself and the possibility of perfection. The Good is the first principle of everything; its displacement from our attention, its subversion into "idolatry" (as in nihilistic ontologies which place Power prior to Value, and thus flatten Value into Power's relative expression), or its death when it is mythologically embodied in some specific god, is what in the deepest sense drives actuality away from the possibility of perfection and towards the total collapse of meaning.

Somehow, we need a unity (or tensegrity) of opposites: To grasp the Good in our worldviews in a way that is not overly relativistic or absolutistic, or, similarly, individualistic or collectivist. To mediate between the tendencies towards these opposing extremes, and to redirect the energies of paradox from destruction towards creation, is to understand the new world that can be shaped by metamodern worldviews.

The Good, rediscovered in our metamodern era, is not static; it is not purely absolute or entirely transcendent, and does not relate to our world as a "second" world. We are active participants in its actualization and transformation. It is also not entirely immanent—thus it is not entirely relative

or personal, and so it requires discovery of something absolute. Following this general structure of a generative unity of opposites, we could say, in a sentence, that the Good is both immanent and transcendent, and that the goal of our metarevolution is an actual world which is continually transformed by its possibility of perfection.

Iris Murdoch: *"The Forms are magnetic, not just passively stared at, they enliven the energy of Eros in the soul and participate in the world, they are both transcendent and immanent."[138]*

The hope of this book is nothing else but to take on our metacrisis with a metarevolution, and to demonstrate metarevolutionary principles which will be applicable to any future metacrisis. In the second half, when we shift from crisis to action, metacrisis to metarevolution, it will become clear why we need the Good as a metaphysical "energy source"—as a light to guide our actions. The various aspects of our metacrisis we have yet to explore will challenge us to create a metarevolution based on these principles of endless transformation in the illumination of the Good. Our narratives and myths and symbols must not teach a utopian arrival at absolute Good, nor the banishment of all Evil. They must convey the need for the ongoing rituals which author and revise the Good in its present actuality, and perennially close the door which leads to nihilism or the usurpation of the Good by Power.

Stanley Rosen: *"Nihilism, to repeat, is a perennial human danger: it cannot be 'solved' without the dissolution of human nature. But one can surely offer suggestions for mitigating the otherwise fatal results of this perennial pestilence. Since the disease is perennial but takes different forms at different historical epochs, protective inoculation must take into account both the permanent structures and the local infections of these structures. Such is the task of philosophical medicine."[139]*

Action will be a main focus in the second half, because it is the endless transformation of value-in-action which can potentially lead into or out of a meaning crisis.

The epoch of metamodernism still includes the two human orientations of nihilism and optimism—we hold the keys to both these doors. This makes it clear that metamodern worldviews need to address urgent and perennial concerns, such as grand (not personal) narratives about the Good

and other values. It will not look like early, utopian attempts at an absolutistic Good; nor will it look like the postmodern turn towards an overly relativistic view. Our optimistic pathway includes moral realism and natural law: Value is real in a way that is independent of our judgment of what is valuable; morality is the actualization of this value; and because consciousness allows us to comprehend these facts, we are gifted with a duty to the Good. Anyone who doubts that such a duty could be a gift need only be reminded that the alternative is a state of meaninglessness and lovelessness in a hollowed-out world.

This is why it is so crucial that before we go any further in exploring our metacrisis and metarevolution, we must ask and attempt to answer: What is (or where is) the Good? Being both immanent and transcendent (relative and absolute) means that, although a dogmatically-absolute view of the Good has provided plausible justification for committing some of the worst atrocities in history, the Good undeniably has some shared, absolute, transcendent component. What our zombie apocalypse makes clear mythologically is that rejection of either the relative or absolute aspects of the Good leads inexorably to some form of meaning crisis.

Our present meaning crisis, fitting in the epochal handoff between postmodernism and metamodernism, is a chasm of detachment from any compelling worldviews, but also an aversion to metaphysics and metanarratives, *per se*. Postmodernism, largely, is colored by this view: Values can be personally "ranked", but concepts like the Good, or God, must be discarded because they claim there is an absolute hierarchy. In other words, the postmodern view is that any idea of an absolute is akin to violence—for if there is no absolute Good, what else could a value hierarchy be but the wielding of personal power?

Keith Ansell-Pearson: *"Morality, Nietzsche holds, is a surface phenomenon that requires meta-level interpretation in accordance with a different, superior set of extra-moral values 'beyond good and evil'… All religions are at bottom systems of cruelty, Nietzsche contends; blood and horror lies at the basis of all 'good things'."*[140]

If "Good" does not refer to anything real, then the only nonviolent approach to life is a dogmatically relative, egalitarian pluralism: Seemingly a

monument to equality in an age of global human community, these views are truly the crypto-nihilistic fuel of our meaning crisis. So, to state our optimistic view yet again in contrast to this postmodern nihilism: Value is pervasive and real (and not an invention or an expression of power); it is intrinsic to our experience of life within a divine milieu or spiritual plenum (both of which may be interpreted naturalistically as the presence of absolute Value in our relative midst); this underlying condition means that the Good can be actualized from a state of possibility; and that it thus carries an ethical demand —that it should and must be actualized.

Emer de Vattel: *"A free action is good or right when it has its justification in the essence and attributes of the being that produces it, that is to say, when a reason or explanation can be given through the essence and attributes of this being as to why his action has had to be so and not otherwise. This recalls what we have said about the match or mismatch of actions with the essence of the nature of man and of things, which creates the foundation of natural law and the source of the laws that compose it."[141]*

Severance from natural law can be recognized by the symptoms of disorientation and depersonalization, just as it can be recognized in the symbolism of the zombie apocalypse. The loss of this moral direction—or, more exactly, the loss of the Good in its absoluteness—is what we call nihilism; it might also be called "antireligion".

Valentin Turchin: *"The credo of antireligion goes as follows: The goals a person sets for himself are his own business, and to meddle in them is unethical—tantamount to physical coercion. The establishment by society of a hierarchy of goals is not to be tolerated, and a socially defined concept of a supreme goal is even less to be tolerated."[142]*

Antireligion is the tyranny of relativism. And it is certainly recognizable in today's world in practice if not in name. This is why at the outset of the present discussion we said that many people today hold nihilistic worldviews, yet would be quite confused if you confronted them with this assertion. How could an equality-loving, pluralistic person be accused of "nothingism"? Because, at the core of their good intentions, we now know there is an emptiness stemming from the metaphysical denial of the Good.

Coming into an era of metamodernism, we've said we need worldviews which both include and transcend the past. This means creating a new synthesis which includes (in some cases) that which was previously left behind, such as the mythological-symbolic way of seeing/being; or the true and powerful kind of imagination which places us in contact with that Otherworld. Many have left behind religion in its formal sense, but do not succeed in "killing" God—only moving God around to superheroes, themselves, their governments, or even the planet as a semi-benevolent Mother Earth.

As we saw through a look at our present meaning crisis, we can't kill the Good, either. We can only replace or displace it—usually with Power, and its corresponding worldview of nihilism (or "Flatlandism"). Sometimes Love or Freedom or other ideas contend for the supreme and sovereign position, but they all implicitly contain notions of Value, and of the Good. Only the Good is sovereign, and is in some important way transcendent to other Forms.

Iris Murdoch: *"Plato knew that Good was not only real but supremely so, a certainty less apparently simple than belief in God. He knew that morality, an orientation between good and evil, was in a unique sense fundamental and ubiquitous in human life… Good is unique, it is 'above being', it fosters our sense of reality as the sun fosters life on earth. The virtues, the other moral Forms, are aspects of this central idea, increasingly understood as interconnected parts of it."*[143]

Metamodern worldviews are certainly going to need the Good, because all of the alternatives feed what we've termed the zombie apocalypse or meaning crisis. We need something religion-like to counteract the culture of despair which antireligion produces. And the exoteric and esoteric sides of the soul's spiritual-developmental drive must not be at war—and we will see in the second half of the book how this relates to a new unity of opposites composed of previously warring elements. The religious drive has a tendency of ideological absolutism, and the so-called "occult" or esoteric practices have a tendency of ideological relativism; and neither of these extremes result in stable and thriving societies.

Antireligion, as dogmatic relativism, can't accomplish what religion has long accomplished in its function of self-transcendence. But religion has

so often failed to cultivate a dynamic balance of relative and absolute (or self-assertiveness and self-transcendence). The high-soaring, Icarus-like spiritual drive must ground itself with a self-immersion deep in the valleys of soul.

Stanton Marlan: *"Of all things connected with the body, the wing has the greatest affinity with the divine. Similar themes are confirmed in art, folklore, classical mythology, sculpture, and poetry. The movement up and out seems to have a universal quality. In the Feast of Icarus, Sam Hazo writes: 'The poet imitates Icarus. He is inspired to dare impossibility even if this means that he might and possibly will fail in the attempt. His fate is to try to find silence's tongue, to say what is beyond saying, to mint from the air he breathes an alphabet that captivates like music. His victory, if it comes at all, must of necessity be a victory of the instant, a lyric split second of triumph, quick as a kiss.' Hazo's study of Icarus values the necessity of flight—if a soul is to have a vibrant and creative life… Like a moth drawn to a flame, our Icarian souls are in peril when in our aspirations we forget our bodies on Earth and the call to an integrated life. When the link to the Earth is not honored, grounding may emerge unconsciously and harshly."*[144]

An optimistic worldview implies a balance of integration and differentiation, of individual wholeness and planetary wholeness—a tensegrity of opposing forces; transcending of souls toward spirit, and grounding of spirit into souls. The same worldviews which have an integrative, "positive" magnetic pull towards social, planetary wholeness must at the same time have a "negative" magnetic push back towards individual wholeness. We will later return to this idea of wholes-within-wholes and see how to put it into practice.

At this moment, it's important to understand that our metacrisis is a reflection of the fact that we have created no viable replacement for religious-type self-transcendence, or the antireligious response which leads to quite literal dis-integration of society. The tragedy of antireligion, of course, is that the project of religion carried on as always, except by self-inflated man-gods. This is why it has been said that we need the Good, if not God. These are the kinds of immanent-transcendent beacons of perfection which direct our mimetic desire in a positive direction and put metaphysical distance between the individual and Value—such that the individual does not mistake himself as the originator of Value. Religion, additionally, when viewed as the conscious

drive towards perfection, is not one zealous ideology competing with other equally narrow dogmatisms—it is the superindividual accumulation of moral psychotechnologies.

Chris Perez: *"When we hear the word 'technology,' we think of devices that solve problems. The word is used in cognitive science to describe our mental toolkit. Literacy and numeracy are examples of these tools, known as psychotechnologies… They're used to achieve insight, self-transcendence, and the cultivation of wisdom."[145]*

John Vervaeke: *"Most cultures develop an ecology of psychotechnologies, typically in the form of a religion, for addressing perennial problems. But that set of psychotechnologies has to be fitted into a legitimizing and sustaining worldview. In some sense the psychotechnologies have to be integrated with sacredness. What's of course happening for us is...the historical factors have undermined that possibility for us, undermined the experience of sacredness... Because we do not have a culture within which that project [of meaning] and self-transcendence and cultivation of wisdom, the affordance of higher states of consciousness [is] legitimated or encouraged. So people are forced…to cobble together in a dangerously autodidactic fashion their own personal responses to perennial problems—without traditions, guidance, communities, well-worked out sets of practices... And so that means they are often bereft when they face the perennial problems."[146]*

Religion, in its most general form, is the accumulation of psychotechnologies which the individual may tap into. It is an extension of mind and memory and challenges and failures and successes. The same can be said for the complex of symbols, myths, and rituals which universally accompany the so-called religious drive in humans. Like the contents of symbols and myths, religion is the collective analogue of something personal in morally-attuned animals. Many attempts have been made to fully discover the Good, and those who went on these journeys left notes in the shared medium of religion.

Following from the indispensable nature of religious-type ecologies of psychotechnologies (which is to say, patterns of moral affordances that exist, adapt, and evolve in a complex environment), we will need to return later to

advancing versions of religion (a relationship to the sacred and absolute) which are palatable in a metamodern era. These are the beginnings of a metamodern reconstruction of metaphysics and an ecosystem of coevolving worldviews which support the discovery of meaning and perpetuate the goal of charitable participation in each other's personhood—i.e. to be guided by love. This would allow us to overcome the self-inflation that accompanies the loss of the Good—a loss which logically implies that we create rather than discover what is moral, ideal, or valuable.

Iris Murdoch: *"Kant was especially impressed by the dangers of blind obedience to a person or an institution. But there are…just as many dangers attached to the ambiguous idea of finding the ideal in one's own bosom."*[147]

The zombie-inhabited Earth has no optimistic worldviews—just the pale, ambulatory remains of the past. It is as life in Plato's cave, or existence in Flatland. The metamodern era, at the time of writing, is at least partially defined as this experience of, and response to, our meaning crisis—a dark cave where some have falsely concluded that the sun is gone, not worth caring about, or was never real at all.

John Dourley: *"They fail to see what Tillich saw so clearly, namely, that when religion is negated as religion its Shadow can return in…political/ ideological dress, to wreak an equal or even greater harm on the truncated humanity that turns unconsciously to deity in the secular disguise of 'quasi-religions' who then assume the oppressive and 'demonic elements' of the religions themselves."*[148]

Ira Progoff: *"[And] the great discovery of Freud, which was the starting point for modern depth psychology, was his realization that when thoughts are repressed, they are not destroyed but continue in another form in which they have even greater consequences."*[149]

In other words, our denial of the Good is a repression of what is most valuable, meaningful, and beautiful. This repression leads to an inversion of whatever was submerged. And those contents take shape as an embodied Shadow while hiding in our deepest waters—before ultimately surfacing in symbols, dreams, art, myths, and religion.

This brings us to a challenge. Our metarevolution has no particular deity, nor desire to create a new one. We need something else which fits our uniquely metamodern era. In that sense, neither traditional religion nor antireligion are the answers. What we need is the Good, not God. But we also need to make the case for the Good to a largely unreceptive (or even hostile) crowd. How can the Good re-enter a land flattened and annihilated by Power? There is a way forward, and it starts with challenging basic assumptions built into present-day worldviews. We have already begun to do this in discussing Value and meaning. Later on, we will explore Power and Freedom, for the important reason that these ideas (albeit in a distorted form) are the central, foundational ideas in nihilism. If optimists can reach nihilists at that level, then we have a chance at resolving our meaning crisis and profoundly changing the overall state of our metacrisis.

As suggested above, the Good must now take up its proper place—not as a new God, but what so many past gods have partially represented.

Iris Murdoch: *"This 'Good' is not the old God in disguise, but rather what the old God symbolized."[150]*

Religious societies have traditionally been obedient to God, which is to say their worldviews reinforced the symbol of God as transcendent perfection, or pure love, beauty, and light. And by placing these values or ideals within the God symbol (or split between the Holy Trinity), people's will, although free, is directed by seeming necessity towards it. All centers of actions, such as human souls, have the properties of perception and appetite (which respectively involve the discrimination of difference, and hierarchical arrangement of values as conditioned by attention). Obedience, properly understood, converges with absolute freedom, because both require the progressive illumination of one's essential self. Optimism is obedience to the natural law implied by the Good; nihilism is obedience to Power.

Now we can see the role of the Good in a world that has experienced the collapse of meaning attached to the death of the Christian God (who was resurrected as the ultra-narcissistic Übermensch). Our meaning crisis stems from our hiding, repressing, or otherwise dismissing religion—which is the human aspiration to love the sacred. The Good is the only non-nihilistic object of love—to which we are obedient, and thereby ascend to freedom.

Crucial to what follows in this book, our relationship to the Good is not obedience or necessity in any pejorative sense of limiting freedom. Rather, we are identifying the Good as something beautiful enough to spontaneously, freely pay attention to, because we can think of no better way to live. Value is real and we are morally obligated to actualize it. Perfect participation in the actualization of perfection is the true freedom, which is why it can be understood as absolute obedience to what is most absolute.

Further, our continual practice of attention is what constitutes a great deal of our conscious, self-determined choices, which is often termed "free will". Personhood is co-created in actuality through our discovery of ourselves in possibility. A worldview (and world composed of unique centers of action forming a unity-in-multiplicity) which directs attention to the Good is therefore necessary for true freedom. Any distraction is a step towards nihilism. This recovery of freedom, meaning, and the Good as first principle of everything will be handled in the second half of this book as a necessary component of transformation, which is the basic movement into or out of a meaning crisis.

Remember that we can't shut off our desire (the appetite of souls), but we are free to direct our attention, and our attention (or perception) changes our desires. We are most free when we most fully become ourselves, and we become our whole selves by giving our attention to the Good, and coming to be an image of its perfected freedom, love, beauty, and wisdom.

Obedience to the Good is the minimization of inferior mimetic idols. Loving the Good is freedom, because its magnetism draws actuality towards perfection. Freedom is not a moment, not an isolated choice—it is a practice that involves ongoing attention and love.

Iris Murdoch: *"If we consider what the work of attention is like, how continuously it goes on, and how imperceptibly it builds up structures of value round about us, we shall not be surprised that at crucial moments of choice most of the business of choosing is already over. This does not imply that we are not free, certainly not. But it implies that the exercise of our freedom is a small piecemeal business which goes on all the time and not a grandiose leaping about unimpeded at important moments… What happens in between such choices is indeed what is crucial. I would like on the whole to use the*

word 'attention' as a good word and use some more general term like 'looking'
as the neutral word… Will cannot run very far ahead of knowledge, and
attention is our daily bread."[151]

Thus, our metacrisis (and meaning crisis especially) is determined in large part by a deficit of attention to the Good, which is simultaneously the cause of our diminishing freedom—because both meaning and freedom are ontological principles informed by the sovereign Good. Attention to the Good and the moral actions we take in necessity of its beauty are requisite conditions for a free, meaningful, and loving society. The zombie apocalypse, we've seen, is the mythological expression of disconnection from the Good—of worldview vacancy, antireligion, mimetic crises, and therefore "antimorality".

Paul Tillich: *"An antimoral act is not the transgression of one or several precisely circumscribed commands, but an act that contradicts the self-realization of the person as a person and drives towards disintegration."*[152]

Zombies are former (and possibly future) people. They are undead rather than alive, strictly speaking, because they are the end point of moral abdication. They were recipients of natural law's ethical demand, and totally neglected it—starved it to death. Thus, there is a transformation that bridges Man and Zombie, and it is an expression of value-in-action; which is to say that everything actual is an energy transformation expressing the imagination (representation) of the absolute Good. The Good, or the possibility of perfected value, is the most fundamental and basic feature of reality; becoming human is therefore realization and personalization—the immanent and relative embodiment of something absolute—just as becoming a zombie is derealization and depersonalization. Humanness and zombieness span a spectrum of moral action—one approaching perfect love and the other approaching love's entombment.

A good society must have a philosophy of goodness (which involves value-ontology rather than power-ontology). And we must understand that philosophy contains the dual movement out of the cave and the return to it; the leap from Flatland to Spaceland and back to Flatland; "up the mountain" and "down to the city".

Pema Chödrön: *"Spiritual awakening is frequently described as a journey to the top of a mountain. We leave our attachments and our worldliness behind and slowly make our way to the top. At the peak we have transcended all pain. The only problem with this metaphor is that we leave all others behind. Their suffering continues, unrelieved by our personal escape. On the journey of the warrior-bodhisattva, the path goes down, not up, as if the mountain pointed toward the earth instead of the sky. Instead of transcending the suffering of all creatures, we move toward turbulence and doubt however we can."[153]*

Up the mountain means spiritual development, meditation, contemplation, imagination, and metaphysical theorizing. Down to the city means returning from those heights (or returning to the cave in Plato's myth); it means integrating the sacred gifts of absolute possibility into a contextually appropriate actuality. And this "city" is a metaphor for the possibility of rational (reasonable) order. This means that Reason, as the intelligible aspect of the Good, is the supreme governing principle. The philosopher-king (and Socrates especially) is Plato's symbol for this connection.

D.C. Schindler: *"The transcendence of goodness demands both the movement out of the cave and the return to it… To put it another way, to reach the Good as absolute requires both an ascent to it and a descent from it… Plato means to present Socrates himself as the effective image of the Good."[154]*

The Republic, then, is about how any complex system (including human minds and human cities) can and should be ordered around the union of Reason and Justice, which respectively name the actions which discover and distribute the Good.

Alexandre Koyré: *"The human soul, as we well know, is a counterpart, or an exact image of, the city."[155]*

Mark Haeffner: *"Man [is] the microcosm, the lesser world, with inner heavens within his psychic constitution."[156]*

Alexandre Koyré: *"[As such,] justice consists specifically of order, harmony, the natural hierarchy, and the division of labor founded on it which rules, organizes, and unites the whole city… The reign of justice in the soul consists, then, of hierarchic order and the subordination of its parts one to the*

other, a subordination that assures the harmony and perfection of the whole…
That is why it is also the soul's health; not only in the figurative sense in which
we speak of moral health but also in the strictest and most literal sense of the
word. Conversely, injustice, which consists of the disorder and perversion of
the natural hierarchy, is the soul's malady."[157]

Walt Whitman: *"Nothing out of its place is good, nothing in its place*
is bad."[158]

Alexandre Koyré: *"[So] the perfect city is the one in which, in the*
State, as in man, Reason governs, and through it the Good, which it
contemplates."[159]

D.C. Schindler: *"[And because] the city is made, as Plato puts it,*
'from the beginning by Reason'…the most direct enemies of this city would be
the enemies of Reason. The philosopher's task would be to defend the life of
Reason against whatever forces threaten it."[160]

Alexandre Koyré: *"[The philosophers], then, having seen the Good*
itself…will in turn use it as a model in ruling the city, individuals, and
themselves for the rest of their lives… And we have automatically, as it were,
brought about the order of perfection and justice in the structure of our city,
where by that very fact a just hierarchy reigns, founded on the nature of
things."[161]

Through the Good, and the true optimism which we have said is belief
in its sovereignty as absolute first principle, we may free ourselves from the
tyranny of meaninglessness. Even Love and Freedom do not, and can not, hold
the same status as the Good—both are hierarchically dependent on value *per
se* (or the absolute possibility of perfection). For example, we can apply love
harmfully, or at the wrong time, and we can apply freedom in a way which
diminishes freedom. True love and freedom are, then, contingent on the high
and sovereign ontological status of (and attention to) the Good. Goodness, we
contend, is a necessity worthy of our devotion, and our present meaning crisis
has to do with a breakdown in the *"small piecemeal business"* of freedom. We
have essentialized freedom as the moment of action, rather than the continual
attention and obedience to the object of love which informs action. The Good
is the perfect love-object, and, at the same time, the love-object which perfects
everything in its light.

Iris Murdoch: *"It is real, it is out there, but very distant. It gives light and energy and enables us to know truth. In its light we see the things of the world in their true relationships. Looking at it itself is supremely difficult and is unlike looking at the things in its light. It is a different kind of thing from what it illuminates."*[162]

Devoted attention to goodness makes value more visible; it informs the moral action which we assert is the co-creation of souls, the completion of personhood, and the progressive perfection of everything. That is, what we are obedient to transforms us as centers of action.

This is why, in Plato's myth, freedom involves both the escape from and return to the cave. Freedom begins when we step out of the cave and see things as they truly are in the "sunlight" of the Good, but is not completed or perfected unless it is shared with the entire world, which means going down to the cave once more.

And if our metacrisis is defined, in part, by an absence of either God or Good as a discoverable, objective, absolute possibility (what is found outside the cave), then our metarevolution can't succeed without the illuminating quality of at least one of these; nor can it succeed without the philosophers who "go down", or return to the cave.

D.C. Schindler: *"When [Plato's] Socrates…says that remaining above and beyond the cave and enjoying the Forms is deficient, we cannot help but be surprised… The vision of the Forms, which were previously the apparent goal, is suddenly transformed into a penultimate stage in the soul's development; the real end or the real good pursued, it turns out, lies even beyond the Forms—and this 'beyond the Forms' turns out to lie, quite surprisingly, back in the cave. What could this mean philosophically?… Our thesis is that the sovereignty of the Good makes the 'return' to images not a fall from a better place but a movement of internal completion… We see once again that the twofold nature of the good requires both the ascent and the descent… And if this 'going down' is a result of the absoluteness of the good, then the philosopher who knowingly goes down (the convergence of form and content), becomes an immediate presentation of goodness itself. Socrates simultaneously explains and enacts a meaning; he is the embodiment of the truth he communicates. In this respect, then, he represents a real image of the*

Good… His return is, so to speak, the entry of the infinite into the finite, the insertion of the 'beyond' into the 'here and now'… Socrates not only transcends the allegory, he also breaks into it 'from above' and becomes present within it. The simultaneity of being 'above' and 'in' is a reflection of the twofold nature of the Good… This, in Plato's eyes, is the very movement of philosophy."[163]

This dual movement of philosophy is what allows our mimetic desire to be shaped by something absolute. We may choose *imitatio christi* or *imitatio bonum*; the superseding challenge to either is the individualistic, egoistic, antireligious worldview which says that imitation, or unoriginality, is the chief sin next to physical violence and the moral "coercion" that is believed to accompany any claim that there is a real absolute. If mimesis only happens within the cave, then we never move beyond the cave, and thus we fail to become ourselves.

Wolfgang Palaver: *"One of the difficulties facing the mimetic theory in contemporary society lies in the…rejection of imitation. We live in a world in which imitation is frowned upon, because most human beings strive to be unique and original. Any person caught imitating or following the herd almost automatically attracts our complete scorn. It is thus certainly no surprise why most reactions to Girard's mimetic theory have been negative, for it attempts to argue that all human beings are determined by imitation—a scandalous claim in our world that so highly praises originality… Girard postulates that human desire is not based on the spontaneity of the subject's desire, but rather the desires that surround the subject. He argues that humans do not themselves know what to desire; as a result, they imitate the desires of others… Girard's emphasis on imitation must not be understood in the superficial sense of the term, however. His theory is not an anthropological caricature of human beings, portraying them as a merely imitative species, but rather a description of the fundamental—if not extreme—openness of humans to others. The mimetic theory describes man as a social being that is dependent on relations to others. No human being, in other words, is intrinsically complete."*[164]

A metamodern and metarevolutionary worldview, then, must be a response to the mimetic crisis which is so closely related to our meaning crisis

and loss of soul. We can, to some degree, direct our imitative (appetitive) attention, but we can't shut that drive off completely. This is why we need symbols, myths, and heroes as a complementary piece of our philosophical movement out of and back into the cave. The developmental individuation of heroes in the mythic domain influences real revolutionaries; and real revolutionaries drive the evolution of new myths and new heroes. The two domains create each other like Escher's depiction of two hands, one drawing the other.

Jordan Peterson: *"Heroic behavior compels imitation—a hero, by definition, serves as a model for emulation. The behavior of the culture-bearer, the archetypal hero, constitutes embodiment of an elaborate procedural code. This code is the end result of an evolutionary process, consisting of the establishment of creative behaviors, in the course of heroic endeavor, their subsequent communication in imitation and its abstract forms, and their integration, over time, into a consistent pattern of behavior."*[165]

Anthony Stevens: *"The hero's biological antecedents are very ancient indeed. The responsibility assumed by the hero to seek a priceless item, find the Holy Grail, kill the monster, rescue the captive damsel, realize special powers, are all mythic elaborations of biologically essential patterns of behavior—the quest for food, for territory, for status, for a mate. In practically every fundamental, the hazards encountered by the hero in folk tales and myths have been experienced by animals for the last three hundred million years. It is little wonder, therefore, that the hero continues to exercise a powerful symbolic influence in our inner and outer lives… Heroes are the products of archetypal propensities and historical events… Legendary achievements are attributed to them, which, through repetition from generation to generation, become inflated to suprahuman dimensions."*[166]

J.E. Cirlot: *"These myths enshrined the moral principles, the natural laws, the great contrasts and the transformations which determine the course of cosmic and human life."*[167]

Jordan Peterson: *"Mythic drama, which plays out the exploits of exceptional individuals, appears devoted toward explication of a generally applicable pattern of adaptation. This archetypal model serves to aid in the generation of all situation-specific individual behaviors. Myth evolves toward*

declarable description of a procedural schema capable of underlying construction of all complex culturally determined hierarchies of specific behavior. This schematic pattern matches the innate, instinctual, neuropsychologically predicated individual potential for creative exploratory behavior—indeed, has been constructed in the course of historical observation of that potential in action. The expression of this potential throughout history provides for the creation of specific environmentally appropriate social contexts, procedural and episodic, which promote development of the innate capacities of the individual, protect from danger, offer hope, and inhibit existential fear.[168]

Holding a worldview in which the Good has a sovereign ontological place is itself an act of hope, morality, and true optimism in the time of zombie apocalypse. It means, to some extent, denouncing the purely-immanent man-god or Übermensch within us, the purely-transcendent God beyond us, and understanding that the Good has both an immanent and transcendent dimension between which we must mediate. It is our hypothesis that our metacrisis will be a prolonged and unmitigated catastrophe without new worldviews which emerge from a collective shift of attention towards the Good as the absolute first principle of everything possible and actual. Reality is composed of the Good, which most directly makes itself known through Value, Action, and the love between them.

Worldviews play a crucial role in the creation, maintenance, and transformation of our world, just as the world reciprocally shapes our worldviews. We can disagree on the details, but not whether we need these complexes of ideas, values, and practices. The doctrine of antireligion, at first glance, can seem to exemplify love and freedom by not claiming any hierarchy of values which could be unilaterally imposed on the individual. But, as we've seen, the absence of either God or Good as potential objects of attention (or allowing imbalance or total separation between their immanent and transcendent components), or as sources of meaning and transformative, self-transcending experiences, means that we have committed ourselves to cowering in a dark cave—quite possibly from zombies.

Lack of attention to the Good means not being able to see clearly what is most important—and that leaves us unable to build worldviews which orient

us towards (and aid us in) becoming more perfect versions of ourselves. Really, it is only through our attention (and obedience) to the Good that we can overcome our meaning crisis and metacrisis in general. And, as such, our metarevolution is the beginning of a world centered around the Good instead of God, guns, or gold.

This concludes our entry into understanding our crisis of meaning, which looms large as a very deep crisis-which-generates-crises. It is also an instructive example of a complex crisis requiring an equal or greater complexity of action for its resolution. A metacrisis is a complex system (or metasystem) of crises; a metarevolution is similarly a complex system of revolutions, or a metasystem of heroes (to use mythological language) who might also be called philosophers, revolutionaries, artists, saints, or (surprisingly) politicians.

Now we must turn the discussion towards complexity in general, and the common patterns of all complex systems. Developing this perspective will allow readers to appreciate the differences between the political, revolutionary, and metarevolutionary.

Only the latter meets a metacrisis eye-to-eye, at a level of complexity capable of transforming our actuality into an increasingly-perfect image of the Good.

1.2

COMPLEXITY

"To speak of 'complexity' in the true sense we acknowledge in relation to living matter, is necessarily to imply a multitude of unified elements. The fantastic structure represented by the smallest animate particle forms a whole: in other words, were it not to some degree radially organized, it would fall back into dust. By its very nature an organism would not subsist, as it becomes more complex, nor would it function, if it did not structurally form a system that is centered. And now, to say 'consciousness' is again, just as inevitably, to express the idea of a being folding back and concentrating on itself. To see, to feel, to think is to act or be acted upon as a center of convergence for the vast fan of things which radiate around us. It is to be internally centered. Consciousness and complexity, therefore, are two aspects of one and the same reality—the center—depending on whether we adopt a viewpoint outside or inside ourselves. And this can mean but one thing: that by using this new variable it becomes possible for us to express in more fundamental and more general terms the special transformation which the universe undergoes as it makes a further ascent, in the direction of extremely high complexes."[169]

- Teilhard de Chardin

Our meaning crisis has been our portal into our broader system of crises known here as a metacrisis, as well as the system of action-centers known as a metarevolution. This section will get more specific about the particularities of complexity, such that the reader will gain an appreciation for how this manifesto is about all of the urgent political and social issues of our day, however distant it might seem that we are from those topics. We have not felt the need to call out specific governments or political-economic systems as dysfunctional; yet, it is worth saying here that we are indeed pointing out their dysfunction. Previously, this was done by putting a spotlight on meaninglessness and nihilistic metaphysics, which can find their way into social norms, institutions, laws, and much more that we deal with on a daily basis. This section will reveal yet more dysfunction, but from the perspective of complexity science. This book is metarevolutionary, because it is about your country and your government and your politicians, but it is also about all future instantiations of these. The reader is trusted to make these connections, and know that innumerable political manifestos may be written using metarevolutionary principles.

Thus, the rest of this book will deal with two things: The way out of our meaning crisis, and the evolution of action into greater complexity and consciousness; the former is exemplary of why we must move in the direction of the latter—thus we are venturing into our metacrisis as metarevolutionaries.

It would require the space of many books to fully due justice to the subject of complexity, so it is our hope that this overview will help begin to shift the reader's attention to the general patterns of complex systems, and thus appreciate what makes a metacrisis and a metarevolution different from a crisis or revolution. It is the theme of this book that action itself evolves towards complexity, and that when things seem hopeless, it is because the complexity of our crises has run ahead of our systems of action: The metarevolutionary orientation renews hope via action directed at the transformation and complexification of action.

So let us keep our eyes on our meaning crisis while broadening the view to include our whole metacrisis. One goal of metarevolutionaries is to understand which crises tend to propagate or exacerbate other crises within a metacrisis. Our meaning crisis will continue to be a poignant lens through

which to see more general features of any metacrisis. This is because, as metarevolutionaries, we are interested in the differences between deep and shallow crises. Within a metacrisis, a deep crisis has more (and stronger) connections than a shallow one. In other words, we understand value (and thus meaning) to be the most basic feature of reality, and for this reason it is most like a body to which other crises are limbs—thus we are focused on the rediscovery and renewal of meaning, as this change has the deepest implications for every other area of our metacrisis.

Further, we claim that a metacrisis is a complex system of crises, and that the effectiveness of any action within that system depends, too, on complexity. It is not enough to be oriented towards deep rather than shallow crises. In short, if the problem is more complex than the problem-solvers, the problem generally gets worse. Thus, metarevolutionaries are oriented towards action which increases the complexity, consciousness, and coherence of humans and other centers of action.

The significance of a complex-system-informed worldview is that it lights a path for metarevolutionaries seeking to address our litany of crises, such as the meaning crisis we have just discussed. So, in this section, we will primarily concern ourselves with the patterns and features of a metacrisis as a complex system of crises. Through the lens of our meaning crisis, we aim to demonstrate metarevolutionary principles applicable to the resolution of all crises. Key to this discussion are the "basic units" of these systems. Some of these will be familiar (as in atoms as units of matter), while others are largely lost in today's worldviews and need to be recovered. Most importantly, we must show a coherent hierarchy of these units—for a supremacy of atoms (or matter or energy) is a common feature of relatively recent scientific worldviews which aim to be materialist and reductionist—i.e. to explain everything without resorting to anything metaphysical. This attempt, however well-meaning, is one of the faces of nihilism in its denial of the Good—which, as Value *per se*, has an absolute dimension which these worldviews do not acknowledge as real.

As such, the most common units of the materialistic worldview will need to be contextualized in a less-familiar unit which reconciles the best of today's science with our metaphysical optimism. In other words, the

materialist-reductionist's units are, in the end, all units of Action (i.e. quantitative units of actuality), while the metaphysician's unit is a unit of Value (i.e. a qualitative unit of possibility). The former is ontologically subservient to the latter; action (or power) is an expression of the Good, and not the other way around. A recovery of meaning and an end to the zombie apocalypse is thus a reversal from the commonly-held position that value is a mere expression of relative preference (and therefore the exertion of power— the power to be a self-authenticating source of meaning).

Part of the early scientific worldview, from its incubation in a world full of traditional, religious metaphysics, was a mechanistic and reductionist view of reality which implied that what we now call complex systems were just like machines with simple collections of parts. The latest theories of systems and complexity can help carry us into uncharted territory which includes but transcends the scientific and mythological-religious worldviews.

Edgar Morin: *"[In complexity,] we touch on substrata shared by biology and anthropology… Such a theory allows us to reveal the relation between the physical universe and the biological universe, and ensures communication between all parts of what we call reality."*[170]

Ervin Laszlo: *"In view of parallel developments in physics, chemistry, biology, sociology, and economics, many branches of the contemporary sciences became, in Warren Weaver's phrase, 'science of organized complexity'."*[171]

Metamodern and complex-system-informed worldviews are needed to mend our relationship with (and within) complex systems. As we build our understanding of complexity in the present sections of this book, it will become clear why it is so important to see both our metacrisis and metarevolution as complex systems. In short, to navigate a complex system of crises, we must come together in the complexification of action—a core feature of metarevolution. Complexity is, among other things, the antidote to one-sided, dangerous ideologies. Perhaps the most fundamental difference between a revolution and a metarevolution is that the former is more directed at problems—and the latter, at problem-solvers.

Ervin Laszlo: *"We cannot expect to satisfy all the requirements attaching to a worldview in reference to science alone, without also drawing*

on the insights of religion and the values of humanism… The new systems view can provide the clues, the metaphors, the orientations, and even the detailed models for solving critical problems on this precious but increasingly crowded and exploited planet."[172]

Patrick Harpur: *"Ignoring complexity is a feature of ideologies in general, and indeed the main reason for their success. Their simple and literalistic perspective promises freedom from doubt, ambiguity, difficulty. They concentrate on a single image which embodies their partial side of the truth so strikingly that it numbs the disciple's imagination and closes it to other possibilities."[173]*

Daniel Schmachtenberger: *"[To give an example,] the 2D view of the cylinder is a circle from one perspective and a rectangle from another. Both are true 'slices' of the reality of the cylinder; neither alone give a clear sense of the higher dimensional shape's reality… The key insight is recognizing these differing perspectives as orthogonal to each other rather than opposite… The recognition of orthogonality…gives us the cylinder, recognizes both lower dimensional perspectives as 100% true from their limited vantage point, and forces the recognition that a congruent picture is possible but requires a fundamentally more complex kind of perspective... Our perception of existential paradoxes often comes from exactly this kind of process: believing in false dichotomies through reducing reality to conceptual slices that are true but partial to the point of actually requiring a seemingly mutually exclusive perspective to explain the full phenomena."[174]*

A complex-system-informed worldview is of staggering importance: neither metacrisis or metarevolution can be understood without it. Indeed, we can't understand our own minds without it. To restate an earlier point: This pair of concepts rely on a foundational understanding of "systems thinking" and how it differs from the analytical-reductionist mode of thinking applied to complicated (but not complex) systems.

Jonathan Rowson: *"Chess taught me that you need to see the whole position in all its reverberating dynamism to make good moves, but also that it is impossible to think about everything at once… We will struggle to address [the issues] without a more concerted effort to see how they co-arise and co-constitute each other. And we will never do that if we start from a vantage*

point that sees each problem as a discrete issue, ciphered off to be analyzed by a distinct discipline… A chess position can be thought of as a system… Systems thinking is a form of perception above all, imbued with understanding that wholes have properties that do not exist in the sum of their parts, and that everything is connected to a greater or lesser extent… While any given chess position is best thought of as a complicated system, the game in motion is best thought of as a complex system, partly because human systems are influencing and influenced by what is happening."[175]

Throughout the rest of this section, we will explore the basic units of complex systems, their features and behaviors, and uncover how and why these systems evolve. By the end, we will have the tools we need to become metarevolutionary.

1.2.1

UNITS

"Seek the elements of the elements."[176]

- Gottfried Leibniz

As Value and Action are always mingling inseparably, anything which can be considered a basic unit of our reality must in some sense reflect their ongoing dramatic union. That said, some of the units we will discuss tend to emphasize certain domains of that reality—whose absolute first principle, we know, is the Good. And there are other units which could have been included, and in other contexts will certainly still be useful. However, in this discussion of complexity and what it teaches us about how to face a metacrisis and how to be metarevolutionary, these units are highly instructive. Further, we will see if we can find a unit which is most fundamental, in the same way as the Good when compared to other possible first principles.

Our goal, altogether, is to see reality from the most simple (reductionist) perspective, the most complex (holistic) perspective, and from every perspective between the two. A world such as ours, with patterns which are discernible (but nimble in their elusiveness), invites one to take on as many perspectives as possible, and strive with useful futility towards the ultimate synthesis. In that gratifying failure, we are faced with insurmountable complexity—precisely because it forever stays a step ahead of our own complexity as systems attempting to understand other systems. In order to build our view of the "very simple" end, we need units whose combination and dynamic interaction are sufficient to describe all of reality.

We have already said that action is the basis of all physically-quantifiable aspects of this reality. And this action is quantized as Planck's constant ("*h*"). We can derive all kinds of other quantities/units from what are called "universal constants" or "physical constants".

Frank Wilczek: *"In 1899 Max Planck proposed what he called a system of absolute units, based on the speed of light (c), Newton's gravitational constant (G), and his newly minted quantum of action [h]… Upon adopting those units as standards, one can express any physical quantity."*[177]

So, it can be argued that all we truly need are these basic variables. All of the following units could potentially be expressed with just the "constants" of nature. But we are striving to understand every layer of the actuality which is built up from action, and so we will see that there are unique insights in each of the units we will explore. Further, as fundamental as action is, we have

argued that the Good is still more fundamental. A quantum of action must, therefore, contain value—and, by extension, there must be a unit of value-in-action.

a. States
States - in general

States are one of the most straightforward ways to "quantize" complex systems, and to measure complexity. States convey the number of possibilities of a complex system at any given time. This doesn't make complexity just a quantitative phenomenon—we will see in more detail later that change in quantity leads to change in quality, and change in quality leads to change in quantity. A human brain, quantitatively, has more (neuronal) states than the brain of a fish, but it is also qualitatively different as a coherent whole. The complex system of the mind has properties which the individual neurons do not.

So when we talk about states, we are expressing a quantitative and qualitative aspect of complex systems. There are many kinds of states composing our web of existence: A person has healthy vital states such as heartbeats-per-minute; the person enters a car which has a range of speed states which it can visit; the car drives down roads which limit the number of geographical states the car can occupy, and the driver acts according to laws which limit the activation of certain states like "speeding"; and the car's emissions combine with those of other cars and changes the state of the biosphere.

All of these states can also be called "variety". Greater variety of states means greater complexity. Life happens when variety is dynamically balanced with order; where entropic heat energy is at the extreme end of variety, and a crystal is at the extreme end of order, humans and other living systems operate in the precarious middle.

States, as coexisting units of a complex system, can become "activated" or "deactivated". In one of the simplest possible examples, a light switch may occupy one of its two states corresponding to "on" and "off". This is a highly mechanical (deterministic) state-switching process which

nonetheless hints at the more complex (spontaneous) state-switching mechanisms of humans, cities, or other complex unities. Later, for example, we will explore a state-switching process known as a Markov chain (or Markov process).
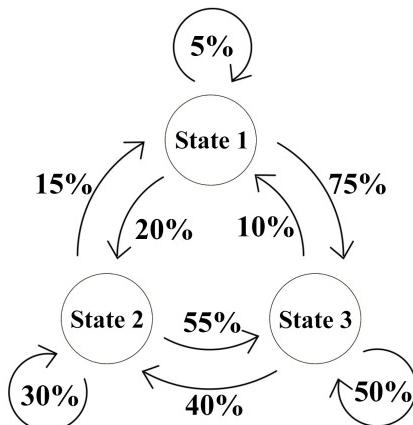
A Markov process defines a state-space and the probabilities that each state will either reproduce itself or transition to another state. A Markov process has no "memory" and the next state is determined only by the present state.

States - in a metacrisis

When crises are viewed as states or elements of a metacrisis, each individual crisis increases the variety/complexity of that whole system. From the human perspective, complexity in this domain is maladaptive: The presence of any new crisis makes it more difficult to adequately address any other crisis in that system. As the variety of possible states increases in a metacrisis, it becomes more and more likely that those seeking to address any single crisis will do so with unforeseen results rippling through the rest of the system.

Simply: When the complexity of problems is greater than the complexity of the problem-solvers, problems get worse. This demand on life

to overcome potentially life-threatening complexity in its environment was called the "Law of Requisite Variety" by Ross Ashby, and we will attempt to incorporate this as the dictum: Whenever possible, make choices which increase the variety of action-centers in order to match or exceed the variety of the problem being addressed.

States - in a metarevolution

The Law of Requisite Variety (or the metarevolutionary dictum we derive from it) relates to the complexity of any system, and places a demand on actions within that system. Effective action must be more complex (in its available states) than that to which the action is addressed. To achieve a world that does not have collapse built into its design, there must at least be sufficient variety to absorb the variety that destabilizes us.

Stafford Beer: *"What is it that controls variety? The answer is dead simple: variety. Variety absorbs variety, and nothing else can."*[178]

Ross Ashby: *"[And] a species continues to exist primarily because its members can block the flow of variety (thought of as disturbance) to the gene-pattern, and this blockage is the species' most fundamental need."*[179]

Bobby Azarian: *"Ashby's Law of Requisite Variety is a principle from cybernetics that tells you something about the computational sophistication of an agent's internal model… An organism must have a repertoire of states that is at least equal to the number of different challenges or disturbances presented by its environment, and it gives us a mathematical explanation of why this principle must also be true… We can describe it in terms of entropy: the more possible states the cognitive system can be in, the higher the entropy, and presumably, the higher the intelligence. In this application, entropy is not a measure of disorder but a measure of cognitive bandwidth."*[180]

As a planet, we have hit an ascending, nonlinear curve in complexity due to the globalization of politics and economics, the abundance of information made possible by the internet, and the ongoing development of artificial intelligence and other technology. Even the amazing human brain can no longer keep up with this complexity, which means that metarevolutionaries are oriented towards the complexification of action-centers (which may

include ourselves, our governments, or humanity as a whole), and meeting the demands of the Law of Requisite Variety.

Ross Ashby: *"In this matter I do not think enough attention has yet been paid to Shannon's Tenth Theorem or to the simpler 'Law of Requisite Variety' in which I have expressed the same basic idea. Shannon's theorem says that if a correction-channel has capacity H, then equivocation of amount H can be removed, but no more. Shannon stated his theorem in the context of telephones or similar communication, but the formulation is just as true of a biological regulatory channel trying to exert some sort of corrective control. He thought of the case with a lot of message and a little error; the biologist faces the case where the 'message' is small but the disturbing errors are many and large. The theorem can then be applied to the brain (or any other regulatory and selective device), when it says that the amount of regulatory or selective action that the brain can achieve is absolutely bounded by its capacity as a channel… [For example,] a certain insect has an optic nerve of a hundred fibers, each of which can carry twenty bits per second; is this sufficient to enable it to defend itself against ten distinct dangers, each of which may, or may not, independently, be present in each second?"*[181]

Anil K. Seth: *"[Simply then, the Law of Requisite Variety] states that a successful control system must be capable of entering at least as many states as the system being controlled: 'only variety can force down variety' [says Ashby]."*[182]

This makes the separation between the revolutionary and metarevolutionary more clear. Revolutionary (or heroic) change is associated with the timely exploration of unknown or repressed domains, whether geographic or psychic, and the effective integration of that content into oneself and one's society. Coming at just the right moment, as demanded by the crisis at hand, the revolutionary person elicits a moment of nonlinear change, or transformational experience, in the world. To do all this is to take part in the rhythm of life, in which crisis-complexity increases and living beings respond with an ever-expanding complexification, an expansion of consciousness, and a never-ending, imaginative self-overcoming.

The metarevolutionary domain synthesizes all of these potential revolutionary actions into a coherent new whole—the purpose of which is to

have the greatest-possible effect with the smallest amount of energy. A natural result of that endeavor is that we tend towards a maximally efficient use of the value-endowed energy. In other words, given a state-space including possible revolutionary change in various domains, the metarevolutionary orientation involves answering to the Law of Requisite Variety—and other principles of complexity—which tell us we are always in the business of making the most out of the least. We can continue to do this in a number of ways, which we will explore in the second half of the book. These issues lay beneath all political and revolutionary action.

b. Matter
Matter - in general

What we call "matter" is, at present, one of the most common "universal currencies" of reality. And material units such as particles or atoms are some of the familiar ways to quantify matter. They are understood as units which relate to material, graspable objects of the "physical world".

Leon Lederman: *"What are the ultimate building blocks of matter? The Greek philosopher Democritus called the smallest unit the atomos (literally 'not able to be cut')."*[183]

The recent history of science tells a tale in which every "fundamental unit" of matter, at one time perceived as "not able to be cut", was found to be highly complex, and made of something still more basic.

Edgar Morin: *"We realized that the atom was itself a very complex system, composed of a nucleus and electrons. Then the particle became the primary unit. Then we realized that particles were themselves phenomena that could be theoretically divided into quarks."*[184]

Modern physics relies on the idea that there are actual quanta, such as quarks, which compose the universe.

Jared Hendricks: *"Quantum is a Latin word meaning 'how much'. In quantum physics, the quantum describes the various discrete or distinct units of energy and matter that are predicted by or observed on microscopic level."*[185]

In this paradigm, there is a so-called particle-wave duality. This is really the equivalent of the relative and absolute, or actuality and possibility, being coexisting parts of one reality, rather than "two worlds".

Vahid Ranjbar: *"Werner Heisenberg, one of the founders of quantum mechanics, argued that the quantum state function for elementary particles should be understood as belonging to the realm of Plato's idealized Forms."*[186]

So we may choose to address individual quanta (such as photons), or fields (like the electromagnetic field)—and would do best to keep both in our view at once. The fields are like the collection of strings on a universe-spanning guitar, and particles are what we call the plucking of exactly one point on a string. Particles, which spring forth as energetic excitations of fields, exist as unique notes played alongside the *"music of the spheres"*.[187]

The most pressing question as we move forward is how all of these units relate to each other (which can be summarized as the attempt for a Grand Unified Theory), both ontologically and practically.

Planck's constant, the quantum of action, and units like quarks relate to our most fundamental understanding of matter—but that still does not tell us about the truly basic, most-fundamental unit of reality, because we are starting from the point of rejecting nihilistic materialism.

Peter J. Lewis: *"If the theory of quantum mechanics by itself doesn't tell us how to conceive of the world behind the quantum phenomena, then it is up to us to construct such a conception."*[188]

The present book has been written at a turning point in scientifically-informed worldviews. Something new beyond the reductionist-materialist paradigm is coming into view. It is strongly indicated by today's complexity science that we must broaden our view to find our most fundamental units. And our attempt to overcome our meaning crisis and apply metarevolutionary change will rely on finding some other kinds of units which capture the complete picture of our actuality, which is a plenum whose first principle is the Good. Material units, useful though they are in limited domains, exalt Action and neglect Value.

Next to states (or variety), many people today take the position (with varying degrees of awareness) that there is nothing beyond the fields recognized by physics, or whatever unit is the quantized version of that field.

In previous eras, it seemed obvious that the domain of the earthly material must be ontologically second to the domain of God—taken here to symbolize and mythologize the possibility of perfected love between Value and Action—i.e., the Good. So it is not just that people at the dramatic pivot point between the postmodern and metamodern eras are matter-oriented—we are also meaning-starved because we have removed Value from our worldviews and are left with lonely Action.

To understand where we are heading in the course of this book, it is important to see the contributions and limitations of science. Quantum physics and related areas of science like thermodynamics have much to teach us, and the view of reality as a plenum of physical quanta reveals much about our universe. But we will need to keep in mind that *"science"*, as Einstein once said, *"without religion is lame, [and] religion without science is blind."* Or, stated otherwise, physics needs metaphysics, and vice versa; Action needs Value, and Value needs Action. The denial of either or both of these as real is what we have called nihilism. Thus, if we seek optimism, we must affirm the reality of the whole which embraces these parts. And that must include a truly "most basic" unit which is the physical-metaphysical building block of our first principle, the Good.

Matter - in a metacrisis

The material universe, and its units such as quarks, leptons, and bosons, form part of the substrate of any crisis. They exist as units which unite to form complex bodies or objects. They are, in fact, a point of focus in many of the crises which exist at the time of writing, such as those relating to environmental destruction and poverties relating to basic human needs. Matter remains centered in our views because of how it relates to our most basic survival needs as humans. A metacrisis must be approached as a coherent whole for it to make any sense, and so we must address material crises even as we seek to overcome the worldviews which say that material is all there is. Unavoidably, an empty stomach will occupy one's mind whether one is a committed metaphysical optimist or not.

We can imagine certain trajectories, in our relation to the atomic world, already in progress. There is reason to believe that we will experience times of increasing abundance (as it pertains to material necessities such as food). Largely, the best way to understand what will happen in our relationship to material necessities, such as food and water, is through comparison to our next unit of complexity: "Bits" of information. In anticipation of that, it is enough to point out that information already does not evoke the same feeling of scarcity that material does (even if the real boundaries between the two are blurred). Information is abundant. If one learns a fact, it does not make it any harder for another to learn the same fact.

And so, we will not get lost in a narrowly-utopian vision of the future as a progression towards material richness. Similarly, we are rejecting the underlying ontological orientation which would make one believe that there is nothing greater than the mastery of matter. At the same time, we can recognize that our current metacrisis contains crises which relate to our physical, material, environmental conditions. The idea behind our metarevolution is that sometimes the best way to resolve one crisis is by shifting our focus towards an even deeper crisis, which, as long as it persists, will fuel many others. Our attention is being directed at our meaning crisis, because it relates to metaphysical first principles, and acts as a deep crisis in relation to all others within our metacrisis. Resolving it will change crucial underlying conditions which would otherwise impede the resolution of other crises, such as the poverty and starvation still being experienced by much of the world.

Matter - in a metarevolution

A revolutionary approach might absolutize material pursuits—in fact there have been actual revolutions predicated on exactly this. From our current vantage point, we can see how the oversimplified solutions found in typical revolutionary thinking (as part) are a form of violence against metarevolutionary coherence (as whole).

A metarevolutionary approach would allow for, and conditionally encourage, the sort of abundance which makes it easier to meet our basic needs as humans. But it would place crises relating to poverty or scarcity or

starvation within the framework of a metacrisis. Action which addresses any such crisis within a metacrisis must not globally externalize more harm than it reduces locally; and there must be no better use of energy available to the action-centers who may choose between possible energy transformations. Such metarevolutionary stratagems have the potential to guide all revolutionary and political change.

In later parts of our look into complex systems, we will see how evolution leads in the direction of greater complexity. This means that action quanta, as units of action-centers, will tend to become entwined in such a way that their patterns of organization tend to be both maintained and transcended. And we will look into the topic of finitude—i.e. that matter, energy, or other basic features of reality have an "arrow of time" which strictly distinguishes between formerly-possible and presently-possible states. This one-way road is, we will see, the very thing which negates the theory that we are living out a meaningless, blind, and absurd march towards complete disorder.

c. Bits
Bits - in general

A "bit" (a combination of "binary" and "digit") is a unit of information in complex systems; and entropy, quantified in bits, is the fundamental measure of information. Finally, bits and entropy relate to probability or "surprise" (which has an exact definition, other than its colloquial meaning, that we will explore).

Let's illustrate the formal idea of "information" and its units through a couple of simple games. Unless you are an unusually precocious kid reading this book, it's probably been a while since you've played the game of "Telephone", but the rules are simple enough to remember. Kids form a circle, and one of them starts off by thinking of a sentence to whisper in the ear of the next kid over. The goal is to transmit the message all the way around the circle and not have it altered along the way. It's a fun challenge, because words are more difficult to distinguish when spoken at this low volume.

The other game to keep in mind is known as "20 Questions". One person thinks of a secret message—the name of a person, a place, an object, a

kind of food, or anything. And a second person must guess, with less than 20 questions, what the message is. These are "yes/no" questions only, and you must carefully craft your inquiry to narrow down the possible messages as quickly as possible. These two deceptively simple games are a useful starting point for understanding the key ideas of Information Theory, which we will need in order to make our leap from revolution to metarevolution.

      Mark C. Taylor: *"In their groundbreaking book The Mathematical Theory of Information, Claude Shannon and Warren Weaver developed a notion of information that differs significantly from the common sense of the term. 'The word 'information', in this theory,' Weaver explains, 'must not be confused with its ordinary usage. In particular, information must not be confused with meaning.'… According to Shannon and Weaver, information, in the strict sense of the term, is inversely proportional to probability: the more probable something is, the less information it conveys; the less probable it is, the more information it conveys."*[189]

      Kenneth M. Sayre: *"Although 'information' may signify such different matters as notification, knowledge, or simply data, in any case the imparting of information is the reduction of uncertainty. 'Information' thus signifies the positive difference between two uncertainty levels."*[190]

      Mark C. Taylor: *"Gregory Bateson clarifies this notion of information when he explains that 'information is a difference that makes a difference.'"*[191]

      This formal understanding of commonly-used words such as information, uncertainty, difference, and surprise is an important step towards understanding the principles of our metacrisis and what distinguishes it from a solitary crisis.

      Part of this view we are building is that information has units and can be measured exactly. As an analogy, imagine the electrical wires and water pipes within the walls of your home. Most of the time, you can go about your day using the lights and faucets without any issues. The house is designed to meet the average needs of the family—the pipes can carry a certain number of gallons-per-second, and the wires can carry a certain number of amps of electricity. Sometimes, however, one might notice that when someone is using the shower, and someone else is using the kitchen sink, and yet another person

flushes a toilet, the water pressure at each of these outlets suddenly drops. Similarly, some of their household appliances use a lot of electricity, and occasionally adding just one extra device, like a hair-dryer, can trip the circuit breaker.

These are examples of channel capacity—if you seriously overload these wires and pipes, you're likely to get fires and floods. And Shannon's work on the science of information shows us that information channels are bounded in this same way. Whereas a water pipe's capacity is measured in something like gallons-per-second, information's channel capacity is measured in bits-per-second. The bandwidth of any information channel is measured by the channel capacity and the signal-to-noise ratio. Or, in other words, if we were speaking of how clean drinking-water reaches a home's faucet, bandwidth would measure the size of the pipe while considering how many contaminating particles are present relative to the volume of water. Bandwidth is a hard limit for all information technologies—including computers, books, radios, eyes, brains, economic systems, and governments.
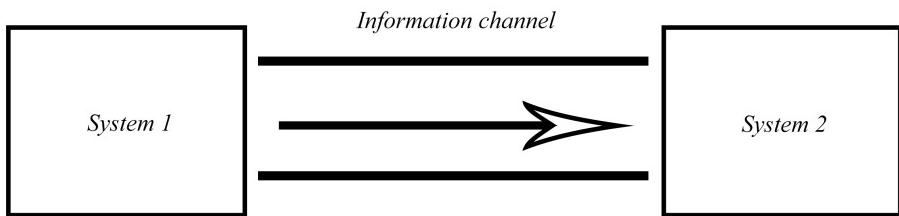
The total bandwidth is determined by the channel capacity and the signal-to-noise ratio. If more noise is introduced, less of the original signal can be successfully transmitted.

Kenneth M. Sayre: *"An information channel consists of two ensembles of statistically related events. One is the input ensemble, consisting of events emanating from the source, or input. The other set is the output ensemble, consisting of events at the terminus, or output, that are to some extent indicative of occurrences within the input set… The relationship between input and output then may be described by a set of conditional probabilities, specifying for each output event the probability of its occurring*

in association with each input event… The only requirement for an information channel is the existence of a relationship between input and output by which the latter ensemble of events provides some indication of what occurs in the former. In its most general form, an information channel exists between any two ensembles related by conditional probabilities."[192]

A bit is a basic unit of measurement in Information Theory, and to ask how many bits of information are contained in a message is the same as asking how many "yes/no" questions it takes to narrow it down from the space of alternatives.

Think of Morse Code, a binary language of dots and dashes (or short and long sounds when the message is in the form of audio). At the start, and at each junction thereafter, the space of possible messages consists of just two choices, like "E" and "T" in this case, because Morse Code is designed to be efficient and these are the most common letters in English.

So the code is essentially like the game of 20 Questions. The first question is "Is the letter 'E'?", to which a dot means "yes", and a dash means "no" (in which case you know that the first letter is "T" instead of "E"). The process is repeated to form strings of letters and words. And if you are viewing the image above on your computer or phone screen, the pixels themselves follow this same logic. The first question is: "Is the first pixel white?" If you answer enough of these binary questions, you can display any image imaginable.

So now we have a measure of information, and understand that it is measured in bits and is bounded by channel capacity and a signal-to-noise ratio. As the kids whisper in their game of Telephone, information is passed along multiple channels. Auditory information leaves the mouth of one child as sound waves which travel a short distance through the air before being picked up by the ears of another child. And these channels can inherently only carry a certain number of bits-per-second. The brain processes what it has just received through the ears, which places yet another limitation on the accuracy of the message.

Information channels must simultaneously transmit signal and noise. The more noisy a channel, the less signal it can faithfully transmit, because the two share a single channel capacity. Likewise, because kids playing Telephone

are whispering, the ratio of noise tends to be higher due to the low level of that signal—which leads, of course, to a humorous distortion of the original message.

Benoit Mandelbrot: *"For the layman, a noise is a sound that is too strong, has no pleasing rhythm or purpose, or interferes with more desirable sounds... The quality of transmission depends on the likelihood of error due to noise distortion, which depends, in turn, on the ratio between the intensities of signal and noise."*[193]

International Morse Code

1. The length of a dot is one unit.
2. A dash is three units.
3. The space between parts of the same letter is one unit.
4. The space between letters is three units.
5. The space between words is seven units.

Letter	Code	Letter	Code
A	● ▬	U	● ● ▬
B	▬ ● ● ●	V	● ● ● ▬
C	▬ ● ▬ ●	W	● ▬ ▬
D	▬ ● ●	X	▬ ● ● ▬
E	●	Y	▬ ● ▬ ▬
F	● ● ▬ ●	Z	▬ ▬ ● ●
G	▬ ▬ ●		
H	● ● ● ●		
I	● ●		
J	● ▬ ▬ ▬		
K	▬ ● ▬	1	● ▬ ▬ ▬ ▬
L	● ▬ ● ●	2	● ● ▬ ▬ ▬
M	▬ ▬	3	● ● ● ▬ ▬
N	▬ ●	4	● ● ● ● ▬
O	▬ ▬ ▬	5	● ● ● ● ●
P	● ▬ ▬ ●	6	▬ ● ● ● ●
Q	▬ ▬ ● ▬	7	▬ ▬ ● ● ●
R	● ▬ ●	8	▬ ▬ ▬ ● ●
S	● ● ●	9	▬ ▬ ▬ ▬ ●
T	▬	0	▬ ▬ ▬ ▬ ▬

In the context of online information channels, like social media platforms, inaccurate or malicious information is arguably the noise that competes for space with signal. In our current moment, the signal—everything we want to receive most clearly—is being drowned out by economically incentivized noise. And finding a trajectory towards a revitalized information ecosystem is just one of the challenges within our metacrisis.

Another useful measure, hertz (Hz), refers to the possible frequencies of a signal—as in the more familiar context of radio stations which are named for specific frequencies, like *"101.5 WPDH—The Home of Rock and Roll"*. A radio signal is transmitted at a certain frequency (measured in hertz), and your radio picks up the signal if it is tuned to that same frequency. For another

example, computer companies may list the GHz (gigahertz) of their products because more GHz correlates with faster processing of information. Restated, this measure relates to the question: How many yes/no questions can be answered per second?

In the game of Telephone, the information that is transmitted has a high error rate—the comedy of this is really the point of the game. When you whisper, you are weakening the signal in relation to noise, and you are restricting the natural range of frequencies of the human voice. And kids may find through trial and error that the best way to counteract this is to whisper more slowly. Speaking slowly reduces the number of bits-per-second being transmitted, so the message is more likely to remain within the bounds of the channel capacity, and thus be conveyed without error.

Back to the other game, 20 Questions, we arrive at the ideas of entropy and the free-energy principle. With each question in the game, the number of possible messages gets smaller. Entropy tells us different things depending on the perspective we take. Simply, like bits or bits-per-second, it gives us a way to measure information. Unique to this measure, though, is that it is also a measure of the average surprise of a given message source.[194]

Entropy is…

"the fundamental measure of information

measured in bits

a measure of the information in a message, that does not depend on how the message is represented

equal to the average surprise of messages from an information source

an additive measure; the entropy of a pair of messages is the sum of the two

related to the length of the message, in that it tells us the number of bits the message requires if we use an efficient code"

Disorder (which can also be called entropy) is the natural direction of our universe, and living systems can only be called so because they are localized reversals of this process. To be alive is to be the embodiment of order, and to thrive is to evolve in the direction of increasing complexity and consciousness.

Bits - in a metacrisis

The ongoing increase of complexity in a complex system of crises means that the information-handling action-centers must continually increase their information channel capacity (or bandwidth, which is a measure of channel capacity + signal-to-noise ratio) or else there will be an information overflow which leads to disorder and likely the collapse of the system. We have already made a similar point through our discussion of Ashby's Law of Requisite Variety.

In both cases this means, for the political or revolutionary person, a certain humility. We may, together, address our biggest crises—but if we continue to use the same modes of perception, thinking, and action from past eras, the future will not gracefully unfold from the present, but rather will violently consume it. One of the key differences between a revolution which addresses a crisis and a metarevolution which addresses a metacrisis is that the latter is explicitly oriented towards greater complexity, consciousness, and coherence within and between action-centers. The former is like the sardonic "shortcut" which reveals itself to be the longest path between any two points: Somehow, charging directly at a crisis turns into a Zeno-esque endeavor where one always halves one's distance without ever reaching the desired destination. The metarevolutionary "long road", conversely, seems to entail detours while, in retrospect, it becomes obvious that no shorter path would have sufficed.

Bits - in a metarevolution

The informational entropy (measured in bits) of a metacrisis must be compared to the bandwidth of action-centers; if the complexity of the former exceeds the complexity of the latter, instability and collapse become inevitable. As such, metarevolution is oriented towards meeting the requirements of the Law of Requisite Variety. Or, in other words, we seek actions which increase the complexity (specifically, in this context, as bandwidth) of action-centers.

In the second half of this book, we will explore a way beyond our meaning crisis which simultaneously demonstrates metarevolutionary principles based on the concept of information as probability or surprisal.

d. Calories

Calories - in general

A calorie is a unit of heat energy, interchangeable with all other forms of physical energy.

H.T. Odum & Elisabeth Odum: *"Since all kinds of energy can be converted into heat, we can measure the energy flowing into and out of a system in units of heat energy such as the Calorie… All processes require energy in some form—light, motion, magnetism, electricity, chemistry, etc. Because all forms of energy can be converted into heat, energy can be defined and measured as the ability to generate heat."*[195]

All actions are energy transformations, and so the calorie is a useful unit of Action, and of Power. In what follows, we will explore the many practical, political, biological, and spiritual implications of energy. And it will be useful to keep in mind calories as a convenient, generic unit of that energy.

It should also be kept in mind that the truly fundamental unit of action is Planck's constant (also denoted by $\hbar$, or "h-bar"). Scientifically and philosophically, it is important that a quantum of action exists. There is a smallest possible amount of action, and calories are indeed composed of many of these quanta. But Planck's constant is infinitesimal, making it less practical for some of our present considerations—just as the watt is a useful unit for measuring electricity, even though we could argue that a single photon is the more fundamental unit.

The increasing complexity of a metacrisis creates a situation of competition, and leads in the direction of energy scarcity. Calories, then, can directly convey the amount of energy used in any revolutionary action directed at any crisis. By way of this, when judging that energy use in the context of a metacrisis, one may arrive at the conclusion that calories are a measure of morality.

One pitfall, already discussed, is Power's perennial claim to ontological supremacy—in the form of various nihilisms. It is especially useful, then, to fully grasp concepts like energy, calories, and power.

H.T. Odum & Elisabeth Odum: *"Power is the rate at which energy flows. The power flow in a pathway is the Calories passing over it per day… The word 'power' is also used in a general way to indicate the ability to influence, as in 'political power' or 'economic power'. We will show that even these processes may be measured by the flow of energy. That is, physical and biological measures of power, defined as the flow of energy per unit of time, may also be used to measure other kinds of power."*[196]

Energy is indeed extremely important, and will continue to be a point of focus throughout this book. But it must not take the place of the Good as reality's ultimate feature. The Good is more fundamental than Action, and so all energy flows are inexorably attached to the possibility of perfected Value, and morally judged by their effect on actual perfection.

Calories - in a metarevolution

The energy demands of each crisis within the system of a metacrisis creates pressure on action-centers to make the most-effective use of energy. A metacrisis will naturally tend towards obfuscating the best use of energy, as its constituent crises dynamically interact and compete for attention. This means that metarevolutionaries must actively strive towards ideal energy use as moral usufructuaries—morality being defined by the alignment of energy flows and transformations with the perfect actualization of the Good.

We may now clearly see that the revolutionary approach pits itself against a crisis, without considering its energetic cost—either within itself or comparatively with other crises and revolutions. In a metarevolution, such questions take center-stage. Before we address any single element of our metacrisis, we must consider every element and determine, as best we can, where action is needed most. Units such as calories provide a standard metric for this consideration.

e. Symbols
Symbols - in general

Symbols are like keys: points of entry into larger spaces.

Throughout the rest of this book, symbols (and the myths, heroes, and rituals they are connected to) will become increasingly important. A symbol is a unit of relationship, analogy, meaning, and quality. Victor Turner called them "units of ritual".

Victor Turner: *"The symbol is the smallest unit of ritual which still retains the specific properties of ritual behavior."*[197]

Iris Murdoch: *"[And a ritual is] an outer framework which both occasions and identifies an inner event."*[198]

Taking these meanings together, it is reasonable to say that rather than measuring a quantity, as with our previous units, symbols are units which express value in the process of actualization.

The view of this book is that we live in a symbolic universe, or, as Christopher McIntosh has said, a *"symbol-strewn landscape"*.[199] To understand them as a fundamental unit of reality is to recognize the ubiquity of interconnectedness. It will become more clear in what follows why everything may be taken as symbolic of anything else, in lesser or greater degrees of truthfulness.

For now, there are a few things to keep in mind about symbols. First, we have some etymological clues about the significance of symbols. In short, the word "symbol" has its origins in love and connectivity, and this accurately reflects the importance of the symbolic domain in the relationship of Value and Action.

Anthony Stevens: *"The Greek noun 'symbolon' referred to a token or tally which could be used as a verification of identity."*[200]

D.C. Schindler: *"Symbols, as Hans-Georg Gadamer has explained, were originally the tesserae hospitales, pieces of a bone or pottery broken apart and distributed to members of a bond formed in an act of hospitality, able to be rejoined by those members or their descendants in a future act, which is both a remembrance of the original generosity and a new event itself."*[201]

Anthony Stevens: *"[And] the conjunction of sym (together) and ballein (to throw) emphasizes the idea that the strange must be thrown together with the familiar to construct a bridge of meaning between the known and unknown. In psychological terms, something unconscious is connected with consciousness, resulting in the experience of new meaning."*[202]

D.C. Schindler: *"[Of further interest is] the etymological connection between the words 'symbolical' and 'diabolical' [which] was first made known to me…by German philosopher Ferdinand Ulrich… The words 'symbolon' and 'diabolon' are etymological opposites: [symbolon] literally means 'to throw together,' 'to collect,' 'to join or unite,' and 'to come together'; [diabolon] means 'to throw over or across,' and 'to set at variance'… The more extended meaning of the verb [diabolon] thus includes 'to slander,' 'to misrepresent,' and 'to deceive by false accounts'… To acknowledge the primacy of that reality, as the symbolical does, is to become a part of a larger order, to be situated in a whole and so have one's own reality, so to speak, enlarged. The symbolical is always more than itself; it shares intrinsically in the order that it helps constitute and so what lies beyond it at the same time lies within it. This is why it is a 'joining-together', and why it is characterized by bonds."*[203]

Next, as compared to a word or sentence in a narrative description, symbols tend to partially express the inexpressible or paradoxical. They are situated between opposites as mediators, and hence point beyond either half towards some yet-unrealized whole.

Ira Progoff: *"One of the important functions of symbols is to point toward and to communicate insights and wisdoms of life that cannot be otherwise disclosed."*[204]

Anthony Stevens: *"Symbols tolerate paradox and can combine contradictory ideas."*[205]

Ira Progoff: *"This quality, the essence of the symbol, is its ability to express simultaneously the various aspects (thesis and antithesis) of the idea it represents… Since it is symbolic, the knowledge which it provides is never exact, only approximate and sometimes merely metaphoric. That is inherent in it and is both its limitation and its special capacity."*[206]

This is why we have already given some attention to the threads to ideas weaving themselves into metamodern worldview. It was noted that the "analogical mode" has been neglected—and, along with it, symbols, myths, dreams, and much more yet to be discussed. So, not only are symbols incredibly important, they are also currently undervalued. Their *"special capacity"* is, in part, their unique mode of communication. In addition to this, it is important that what they communicate is more qualitative, making them different from other units we explored so far.

Symbols are an especially adept language for the discovery and communication of meaning. This, again, makes them worth their weight in gold in our present context.

Symbols - in a metacrisis

We have discussed at length a symbolic interpretation of zombies. It is not just that such symbols and myths are useful explanatory devices—rather, their mode of communication is unique and fundamentally different from the narrative mode. Symbols are analogical.

J.E. Cirlot: *"Analogy, as a unifying and ordering process, appears continuously in art, myth and poetry."*[207]

Anthony Stevens: *"A symbol is a transitory embodiment of all that is analogous and associated with it. Its magical quality lies in its capacity to speak to many levels of experience at once. This miraculous power demands reverence if it is not to be extinguished. Psychic impoverishment is inflicted by over-restrictive definitions. Thus, in attributing objective meaning to symbols, and in compiling symbolic treasuries, one must exercise extreme caution… Even the most widely dispersed, most indestructible symbols will have*

different shades of meaning for each psyche in which they appear, for symbols, like the dreams of which they are part, are polyvalent: they have more than one meaning... Cultural associations as well as personal associations are always of importance. Skill in the art of interpretation lies not only in a knowledge of symbolic origins but in laying due stress on the symbol's subjective impact: a tree may well be the World Axis, the Cosmic Tree, but it is also a subjective manifestation of a psychological process in the person producing it—an image of the Self, perhaps—and only contributes to personal growth and healing if it is experienced as such."[208]

D.C. Schindler: *"We might think of the 'parts' of cosmos as so many symbols, which is to say that things are signs of the Good that is their always prior principle of unity; that, understood in this way, they are seen to 'fit together' by virtue of their most basic nature, to be suited to each other, and so to have a proper place, thus taking part in a larger order (which is for that reason always hierarchical); and, finally, that, in their 'symbolic' joining together, they make really present the transcendent Good, they are 'transparent' to it in their interrelation without ever exhausting its meaning... It is important to see that an order founded on goodness is essentially symbolical and that, conversely, the essence of symbol is goodness. These two principles are not related in a merely accidental way— they cannot be separated."[209]*

Thus, the meaning of Man is perpetually incomplete, but the further discovery and evolution of symbols is a force moving us towards greater depths of self-understanding. In the first half of this book, the focus has been our metacrisis, and the zombie apocalypse is a symbolization/mythologizing of something essentially missing from the complete image of humanity. This has been a necessary step in our self-actualization, and in the second half we will see the other side of our meaning crisis—a light beyond a cave. The resolution, just as with the crisis, will involve symbols—not as a convenience of communication, but as a fundamental feature of reality and a necessity for change of any kind.

Symbols - in a metarevolution

Symbols are more than units of meaning. They are one type of vessel in which Value and Action come together. If a zombie symbolizes the unfulfilled potential to be fully human, there must be a symbol for something greater-than-human, some superfulfillment towards which we may strive.

Iris Murdoch: *"Man is a creature who makes pictures of himself and then comes to resemble the picture."[210]*

Ira Progoff: *"[And it is here that] we have the key to the pattern by which personality develops. The process of growth begins with an image of its goal."[211]*

In their relationship to humans and other centers of action, symbols exert an active, magnetic pull. A meaning crisis can therefore be expressed through symbols of spiritual and moral impoverishment (such as zombies), and be seen as resulting from a deprivation of life-enhancing symbols. As such, we will have to return to the subject of symbols and the transformations they both represent and evoke. We hope to demonstrate that symbols play a major role in the development and depth of humanity, and the perfection of Value and Action's romance.

g. Holons & monads
Holons & monads - in general

We have said that a central aspect of complex systems is that they are indivisible. If you take apart an animal to perform a reductive analysis of its parts, the emergent properties that were observed in the animal as a whole vanish, like a hand which grasps at an object only to have it evaporate. Once systems come together into a metasystem, a new center of action emerges which includes and transcends the wholeness of those individual elements. That is what makes it indivisible; it will cease to be itself if it is not acting as a dynamically organized, unified, coherent whole.

To understand complex systems, specifically in the forms of a metacrisis or metarevolution, will require a brief explanation of the concept of self-organization or autopoiesis. Which means we will ask: If a person is an indivisible center of action, how can such a system come into being, especially if it is composed of other indivisible centers of actions? The answer requires

something that is equally scientific and spiritual, because no center of action is merely a complex system of material units such as atoms. As such, our discussion is turning towards units which can express the fullness of reality, and stand as the true quantum of the Good.

We need a unit which does not leave out others like particles or bits, but does not end with them either. In a sense, we need a unit which is both material and spiritual (and, similarly, quantitative and qualitative). If the loving mixture of Value and Action is all that there is, there must be a true quantum of this relationship.

And because we are approaching all of this from a metamodern perspective, it is worth noting that "spiritual" refers to what we have termed the Good—and people are images of relative value-in-action implied by its absolute possibility. As such, we say with a rather naturalistic overtone, we are spiritual beings. One can speak of being "ensouled" in a non-supernatural sense—it is simply being an individual whose actions are always discovering, expressing, perfecting, or destroying the actuality of the Good. Spirituality, then, is the practice of becoming a microcosmic symbol of the macrocosmic relationship between Value and Action.

Such ensouled creatures, as we began to say earlier, self-organize—but from what? This is where we say that there must be some "spiritual atom" or basic element which may combine itself into metasystems of greater spiritual complexity. A human, for example, must be an extremely complex system unifying a staggering number of these fundamental units.

A metaphysical and linguistic change will help us begin to move beyond our impasse. One initial change involves subsuming the concepts of a "part" and "whole" into the concept of a "holon", and contextualizing our previous units (which, other than symbols, all leaned towards being quantitative and expressive of Action) within the metaphysical unit of a "monad". Let's first address the notion of a "holon".

A holon is simultaneously part and whole, and reality is composed of holarchies—the organized relationship of holons within holons within holons.[212]

Holon type	Examples
Evolutionary	Cells, organelles, organs, organisms
Linguistic	Phonemes, morphemes, words, phrases
Social	Individuals, families, tribes, nations
Credit: "Janus" by Arthur Koestler	

Ken Wilber: *"A whole neutron becomes part of an atom; a whole atom becomes part of a molecule; a whole molecule becomes part of a cell; a whole cell becomes part of an organism. Each stage is a whole/part, or holon, and the resultant nested hierarchy is a growth holarchy."[213]*

Lynn Margulis: *"Life on earth is a holarchy, a nested fractal network of interdependent beings."[214]*

Arthur Koestler: *"The holons which constitute a living organism or a social body are, as we've seen, Janus-like entities: the face turned towards the higher levels in the holarchy is that of a subordinate part in a larger system; the face turned towards the lower levels shows a quasi-autonomous whole in its own right… Some hierarchies do indeed have a well-defined apex or peak, and a definite bottom level… But the grand holarchies of existence—whether social, biological or cosmological—tend to be 'open-ended' in one or both directions."[215]*

Holons are a category beyond "part" or "whole"—they are simultaneously whole/part, or wholes within wholes. And, according to Koestler, it is the god Janus who represents the holon's opposing forces of self-assertion (i.e. the holon's "wholeness") and self-transcendence or integration (i.e. the holon's "partness" in relation to larger holons).

We received the name "January", the month of transition from the old to new year, from Janus. And he symbolizes, with his two faces sharing one

body, that we must find a way to live harmoniously despite internal contradiction. Neither of the extreme ends of life's polarities may dominate if we wish to create healthy holarchies. It is the way of metarevolutionaries to create unities of opposites.

Arthur Koestler: *"This implies that every holon is possessed of two opposite tendencies or potentials: an integrative tendency to function as part of a larger whole, and a self-assertive tendency to preserve its individual autonomy… Under favorable conditions, the two basic tendencies…are more or less equally balanced, and the holon lives in a kind of dynamic equilibrium within the whole—the two faces of Janus complement each other."*[216]

Koestler goes on to say that we experience these Janus-like polarities in the following ways.

Arthur Koestler: *"integration <—> self-assertion*

partness <—> wholeness

dependence <—> autonomy

centripetal <—> centrifugal

cooperation <—> competition

altruism <—> egoism.[217]*"*

This points to a crucial difference between a dynamic of wholes-within-wholes "holarchy" and a mechanistic, parts-within-wholes "hierarchy". Worldviews which incorporate the latter have been the norm throughout history. As in, hierarchies are an ever-present feature of life and reality, and should not be taken in this discussion as the "enemy". However, there are many pathological forms of hierarchy—and the sickness is generally, in fact, a symptom of imbalance between the partness and wholeness. In a totalitarian government, for example, it is not hard to see that the wholeness of the dictator tends to erase the wholeness of other individuals—reducing those individuals to objectified parts of the one and only whole. And of course things can swing in the other direction: Sometimes we lack wholeness.

Holons, on the other hand, give us a constant reminder of this dynamic balance. We are reminded that at every level, there awaits the possibility of extreme self-assertiveness and extreme self-transcendence—which create worlds of excessive chaos or excessive order, respectively. The middle, as Peterson says, is heroic.

Jordan Peterson: *"The fascist, who will not face the reality and necessity of the unknown, hides his vulnerable face in a 'pathological excess of order.' The decadent, who refuses to see that existence is not possible without order, hides his immaturity from himself and others in a 'pathological excess of chaos.'... The pitfalls of fascism and decadence may be avoided through identification with the hero, the true individual. The hero…stands on the border between order and chaos, and serves the group as creator and agent of renewal. The hero's voluntary contact with the unknown transforms it into something benevolent—into the eternal source, in fact, of strength and ability."*[218]

If you value life, you must value the dynamic interplay of partness and wholeness—those self-conflicting tendencies within every holon. Janus, in this setting, is a symbol for that unity of opposites—representing our goal of a healthy balance between every holon's oppositional strivings.

We are holons: complex systems nested within many other complex systems—Earth itself included. Our metarevolutionary goal in this context is to form Janus-facing holarchies, not unidirectional hierarchies where power only flows from top to bottom. This is a necessary conclusion following the fact that we need action on a planetary scale to confront our metacrisis, and that a top-down (tyrannical) approach as a means to this end is not desirable or even viable. Holons in a holarchy must not lose the property of being ends-in-themselves.

We must see ourselves and our planet as holons, and therefore inherently valuable in a spectrum of ways spreading from the metaphysical to the political. Value, therefore, must be a coherent idea from the perspectives of humans and planets and the totality of actuality. We are not, in this view, free to dominate and destroy the planet any more than we are free to kill another person. Conversely, a hierarchy that ensures its own health and sovereignty by removing all disorder (hence, all freedom, self-assertion, or wholeness) is not free from the human perspective. Both of these scenarios fail the Janus test—they are not a healthy unity of opposites.

These points should illustrate the basic "habits" of all of the units we've discussed so far. Among these units, we find atoms (basic unit of matter), bits (basic unit of information), and calories (basic unit of energy).

And, if complex systems such as humans are composed of self-organizing simple units (or holons) such as these, which is the most fundamental? The Good, after all, is the first principle of everything, and so the ultimate unit must be a unit which partially and relatively expresses the Good. The ultimate unit must relate to both Value and Action, or value-in-action. This "simple substance" or embodied unit of meaning, as Leibniz proposed, is what we will call a "monad".

Robert Latta: *"This new atom or unit of substance…[is what] Leibniz calls a monad."*[219]

Gottfried Leibniz: *"Substance is a being capable of action. It is simple or compound. Simple substance is that which has no parts. Compound substance is the combination of simple substances or monads. Monas is a Greek word, which means unity, or that which is one. Compounds or bodies are pluralities [multitudes]; and simple substances, lives, souls, spirits, are unities. And everywhere there must be simple substances, for without simple substances there would not be compounds; and consequently all nature is full of life."*[220]

A monad, in fact, includes and transcends the other basic units we've discussed—because in actuality there are no disembodied "ideas" (no "Value in a vacuum"). Simply, then, monads are embodied units of quality, and the most direct way of understanding the love between Value and Action. A monad, conceptually, combines Planck's constant (as the quantum of action) with the Good; as in, it is the smallest-possible unit of value-in-action. A worldview which includes monads, as we understand them, is fundamentally optimistic and therefore incompatible with metaphysical nihilism.

To understand this view, we have been building an appreciation for other basic units like bits, because information is a crucial element of all complex systems. A metarevolution is a metasystem composed of centers of action—which we will henceforth also refer to as monads. Monads, aside from concentrating (centering) the principle of Action, accumulate love, freedom, and meaning in degrees of increasing complexity. The self-organization of monads leads in the direction of expanding consciousness and a greater actualization of the Good—which is the potential and *telos* of everything.

The view of monads as the most fundamental elements of both the possible and actual accords with the thesis of this book, which is that the Good is an all-pervasive feature of reality, and, indeed, its most fundamental feature. Actuality is a *mysterium coniunctionis* of the "two worlds" of matter and Form. Another way to say this is that the Good is both relative and absolute (or immanent and transcendent). Every experience takes place in this spiritual plenum, which colors every choice with value-potential and moral duty; every action transforms the garden of actuality into a more-perfected or more-distorted image of the perfection which waits dormant in the seeds of possibility.

A meaning crisis is particularly potent within a metacrisis because it deals with principles which are prior to (or deeper than) those found in almost every other crisis, including the ones most familiar at the time of writing, such as the ecological (or climate) crisis. Pollution and destruction of our "material" environment is in fact a symptom of the broken metaphysics we discussed earlier; meaninglessness and nihilism are the chief maladies of both the inner environment we call "mind" and outer environment we call "Earth"; and our meaning crisis is the child of a broken ontology which imagines much of the world as lifeless, soulless material.

If, instead, our worldviews include the postulate that everything, from "bottom" to "top" is composed of monads, then actuality is a gradation of goodness-in-action, capable of striving towards an expressive symbolization of pure freedom, perfect love, and infinite value. Even as monads will naturally fall short of the Good in these respects, it is their perception of and desire for the Good which is the Value-oriented *telos* and steering wheel attached to the powerful but otherwise blind engine of Action.

In other words, there is no material atom which is not married to a spiritual atom (or a complex metasystem of spiritual atoms which may rise to the level of complexity and consciousness found in the human soul, and who knows how far beyond that). Thus, every process of material production and every transformation of energy is a "religious" (moral) concern.

By viewing the evolution of complex systems from the monadic perspective, we invite the discussion of transformation which will take place in the second half of this book (which was also hinted at in discussing calories

and energy). With this metaphysical basis (justification) for transformation, there can be no mistaking the absolute Good with purely-relative goodness. This is an antidote to narrow utopianism which privileges, for example, the perspective of materialistic human wealth. Transformation guided by the light of the Good should not be confused with the quest for material abundance, which is transformation groping in the dark for power. Success will be measured by increasing distance from the vortex of meaninglessness we call the zombie apocalypse, and increasing intimacy with the Good.

To underscore what this means for our meaning crisis and metacrisis overall, let us recall that religions have been shaped by the scapegoat mechanism which perennially ameliorates mimetic crises arising from misplaced appetition (or mimetic desire). We can say, then, that the intensity of a mimetic crisis (which involves distorted appetition resulting from misdirected perception) is directly proportional to the obstructedness of a monad's perception of the Good.

R.W. Meyer: *"Monads [can be described as] psychic points of view, or spiritual microcosms…[which] represent the whole [universe] individually, i.e. as diversely as possible."*[221]

Gottfried Leibniz: *"[And so a Monad has] perfection in proportion to its distinct perceptions. Each soul knows the infinite, knows all, but confusedly."*[222]

If perfect perception of Monas Monadum (the Good) results in perfected desire, then it is the direction of attention and love which transforms us, as complexes of monads, away from or towards the possibility of perfect love, true freedom, and full participation in our spiritual (naturally valuable, meaningful, and morally rich) plenum. And the point must be made that any and every change you can imagine is, at its core, a change in the relationship between monads.

Gottfried Leibniz: *"All nature is a plenum. There are simple substances everywhere, which…continually change their relations."*[223]

A rock, a cow, and a metarevolution are all metasystems of monads, which means as systems-of-systems they are informed by (but not a mere sum of) the perceptions and desires of the elements (the centers of value-in-action we are calling monads) which compose them. Transformation is the name of

the process which can change the pattern of relationships between monads, and thus the perception and appetite of the monadic plenum as a whole. Transformation, therefore, is also a sort of stewardship of energy, which is equally capable of actualizing or destroying the possibility of the Good. When "God is dead" (when a transcendent god is killed and becomes an immanent god) our perception is aimed exclusively at each other, the Good disappears from view, and desire is mimetically reflected in a hall of mirrors called nihilism. This is in contrast to optimism, which can be compared to heliographic communication—also a process of mutual reflection, yet one which carries a light which is transcendent to, or ontologically prior to, each mirror.

Gottfried Leibniz: *"The monad represents, as in a kind of center, the things which are outside of it… Since the world is a plenum all things are connected together and each body acts upon every other, more or less, according to their distance, and each, through reaction is affected by every other. Hence it follows that each monad is a living mirror, or a mirror endowed with inner activity, representative of the universe, according to its point of view."*[224]

So when Good is the Sun to which the earthly mirrors lovingly respond, as in the plant which positions its leaves to maximize the inflowing of light, then mimetic desire becomes a source of healing, growth, and the perfection of desire, and will tend to transform flows of energy in such a way which actualizes Value.

Finally, we can say with certainty, it is not units of quantity (such as atoms or bits) which are the ultimate, fundamental units of reality; the ultimate unit is the monad, the embodied unit of quality. By the same line of thought, it is the Good, and not Power, which is our ontological first principle. This is the choice of optimism over nihilism. It is also *ahimsa*, in the sense that optimism keeps us at the greatest distance from violence, whether in its striving for ontological supremacy, or in its actual mutilation of monads.

Mohandas Gandhi: *"Ahimsa is the highest duty. Even if we cannot practice it in full, we must try to understand its spirit and refrain as far as is humanly possible from violence."*[225]

Crises are the holons of a metacrisis, and revolutionaries are the holons of a metarevolution. Both are formed in and from a monadic plenum, which is the real immortal union of Value and Action. The question now is, what are the pathological forms of hierarchy (or holarchy) which diminish the wholeness and indivisibility of holons (causing anguish—which can be defined simply as a state in which the most meaningful possible universe is not being actualized)? And how can our metarevolution be oriented towards forms of complex organization which nurture the flowering of freedom and love at every scale of our grand holarchy?

On a related note, having monads as our most fundamental units creates a sharp break with the nihilistic orientation. Our meaning crisis stems from Power's perennially-planned coup, which attempts to negate the Good. So it becomes obvious that our best defense is our true form of optimism, and, as we now see, its fundamental unit, the monad. For, in monads, Value and Action are eternally intertwined.

Holons & monads - in a metarevolution

This discussion of complex systems aims to underscore a key theme of our metacrisis: We live in a world in which the complexity of our problems exceeds the complexity of our problem-solving. The way out will involve the evolution of organized complexity—which naturally leads back to the individuals who self-organize in the ongoing expression of life.

By uncovering a view of the universe which accords with modern science without being deficient in meaning, we will be laying the groundwork for understanding the spiritual autopoiesis which leads in the direction of increasingly perfect love and freedom. Better problem-solving is meaningless without this recovery in metaphysics. Therefore we are speaking generally about the nature of meaning, as well as the common patterns of complex systems which may embody or reject meaning. If we can rediscover the Good, uncover the underlying patterns of complex systems, and develop a theory of how these systems transform into new systems and metasystems, then we can

predict what kinds of actions will be useful (and which will be iatrogenic) in the context of a metacrisis, and give it a beautiful purpose which it may otherwise lack or substitute. In short, transformation needs to be oriented towards some end—and the Good is the only rational (non-nihilistic) object of desire which transformation may aspire to actualize.

1.2.2

FEATURES AND BEHAVIORS

"As a pattern, we can encounter an archetypal reality and speak about it as an object—an object of our knowledge and understanding. But as a dynamic living agency it appears to us as subject, as an entity like ourselves with intentionality and some semblance of consciousness."[226]

- Edward Edinger

We can now turn to discussing how all of the preceding units interact, what those patterns of interactions imply about our metacrisis, and how we may use these features/behaviors to our advantage as metarevolutionaries.

Stated otherwise, we have just taken the viewpoint of the "extremely simple". We were, as Leibniz said, seeking the *"elements of the elements"*[227] in order to understand how systems of vast complexity come to be what they are. What follows will be complementary to that view, providing a perspective on the "other end" of complexity. As we continue through this book, and, indeed, through life, this persistent oscillation between the reductive and holistic views will be required. We must not forget that all change is, in the deepest sense, the shifting of relationships within a plenum of monads which imperfectly embody, reflect, and desire the Good. And we also must not forget that complex systems of monads have features and behaviors which are not present at the individual (unit) level. Although we can't give an exhaustive account of the features and behaviors of complex systems, the following at least begins to shift our view from crisis to metacrisis, and revolution to metarevolution.

a. Feedback
Feedback - in general

Now that we have discussed some of the common units of complex systems, we may dive deeper into the informational/communicational/ symbolic relationships (interactions) which make complexity what it is. Many features of complexity, like feedback loops, were first expounded by the forerunner of complex systems science: cybernetics. The field got its name from the Greek word "kubernétés", meaning "steersman" (as in, one who steers a ship). Note its resemblance to words like "government".

Mathew E. Gladden: *"The field of cybernetics was founded in the 1940s to provide a…vocabulary and theoretical framework for use by researchers studying processes of communication, feedback, and control within particular systems."*[228]

Eric Schwarz: *"[It shows that there] are common, transdisciplinary general laws governing complex and highly interactive systems, whether*

physico-chemical, biological, ecological, economic, social, cognitive, natural, artificial or hybrid. These laws are essentially relational or cybernetic. That is, they are less related to the material constituting the systems than to the network of their internal and external interactions."[229]

Mathew E. Gladden: *"From the perspective of cybernetics, attempting to design a better prosthetic limb and attempting to design a better government can be seen as two different manifestations of a more general problem: that of attempting to build a better information system that utilizes more effective and advantageous processes of communication and control."*[230]

Anil K. Seth: *"Importantly, cybernetics adopted as its central focus the prediction and control of behavior in so-called teleological or purposeful machines. More precisely, cybernetic theorists were (are) interested in systems that appear to have goals (i.e., teleological) and that participate in circular causal chains (i.e., involving feedback) coupling goal-directed sensation and action."*[231]

Today we are more likely to hear about complexity theory instead of cybernetics. Regardless, we are concerned with the principles of complex systems, and their implications for any metacrisis or metarevolution. And goal-directed feedback loops are among the central elements of both. The interactions of a complex system are characterized as feedback loops because they are composed of action-centers; the actions of these agents are outputs which become inputs, and these determine the future state of all action-centers; thus action always feeds back into itself.[232] And it can be regarded as goal-directed insofar as Action has an unwavering connection with Value. The Good is the first principle of Action: Value informs Action. Feedback is the linking principle in a perception-prediction-action process which moves complex systems in the direction of value and meaning.

Further, we can distinguish two types of feedback loops which are like complementary adjustments to the "steering" of these systems—these are "positive" and "negative" (also called "amplifying" and "dampening") feedbacks.[233]

Characteristics of Cybernetic Systems

Complexity: The whole has features and behaviors which are different than those of its elements or parts.

Mutuality: All of the elements of a system mutually influence each other.

Complementarity: Analysis of any element will yield a partial truth which is not mutually exclusive with analyses of other elements, even when there seems to be contradiction. Instead, layers of analysis build up a complementary, higher-order truth.

Evolvability: Systems are dynamic, goal-oriented, and change in an evolutionary manner due to interactions with other systems.

Constructivity: The general tendency of the universe is an increase of ordered complexity. Metasystems are constructed from many smaller systems in a pattern which continually includes and transcends past states.

Reflexivity: All action creates "reflexes", in that all outputs feed back on themselves as inputs.

Credit: Cliff Joslyn, "The Nature of Cybernetic Systems"

Cybernetic terms
Coupling - The combination of two or more wholes, providing input for each other; feedback loop joining two or more elements
Feedback - Circularity of action between parts/elements of a dynamic system
Homeostat - A system with a trajectory of equilibrium
Negative feedback - A loop created by an operator/disturbance that diminishes each cycle
Positive feedback - A loop created by an operator/disturbance that amplifies each cycle
State - A condition or property that can be defined and recognized if it occurs repeatedly
Variety - The number of distinguishable, distinct elements/states
Credit: Ross Ashby, "An Introduction to Cybernetics"

The individual step in the process of a positive feedback loop is any action which produces more of itself after each cycle. So a positive feedback loop is not necessarily positive in the sense of "good", but rather in the sense of amplification or reinforcement. Conversely, the individual step of a negative feedback process is any action which produces less of itself upon receipt of its own output-to-input cycle.

Joseph Dodds: *"Increasingly in science today there is an emphasis on the study of nonlinearities driven by positive feedback where an increase in a variable feeds back recursively producing catastrophic runaway increases if not reined in eventually by negative feedback."*[234]

John Briggs & F. David Peat: *"[These] two basic kinds of feedback are everywhere: at all levels of living systems, in the evolution of*

the ecology, in the moment by moment psychology of our social interaction, and in the mathematical terms of the nonlinear equations."[235]

In general, feedback is a simple yet formal way to understand the relatedness of everything. It connects us to ourselves and to each other: Nothing is truly disconnected in our universe; everything shares bonds of causality and analogy. That all instantiations of Action feed back on themselves is a basic feature of our interconnectedness. Recognition of these facts in the context of crises is what leads us to believe we must learn to view our whole metacrisis at once. With that bird's-eye-view, we can discover patterns of feedback which wouldn't be apparent from ground-level.

Feedback - in a metacrisis

Similarly, it is not obvious where one crisis stops and another begins. This is another reason we must shift our attention from individual crises to our unified metacrisis. In any complex system, outputs turn into inputs which turn into outputs—feedback loops which, in our present context, amplify destruction and despair in the milieu of a metacrisis.

The symbolic presence of zombies, for example, acts as a positive feedback loop which reinforces meaninglessness through mimetic desire. And, on that note, optimism produces a negative feedback loop which dampens (lessens the presence of) nihilism. The movement towards ontological first principles is correlative with the movement from shallow to deep crises within a metacrisis (though it is not the only variable which can lead in that direction). In other words, a crisis of meaning, which deals with the Good and value-in-action, is a deep crisis because its basis is the destruction of that which is at the core of everything.

From the perspective of feedback loops, the measure of a crisis's "depth" within a metacrisis becomes a more exact science. The deeper the crisis, the greater its effect on all other crises. One can see this relationship clearly by considering the formation of a string of letters as algebraic variables of states in a system with a Markov-switching process. For simplicity, states A, B, C, and so on each have a 50% chance of producing itself as the next state, and a 50% of producing a new state (as in A could produce B). If a

change occurs where the "D" produces an "E" in "ABCDE", the first four states have remained unchanged. The conditional probability of ABCDE, given ABCD, is 50%. But if one begins with A, the conditional probability of ABCDE is only about 3%. If we examine E as a crisis within a metacrisis, it is clear why a change to A can have a more profound effect than direct action on E itself.

Viewed in isolation, a meaning crisis is bad enough. When seen in the context of a metacrisis, in which it is one of many states in a state-space, it gets (to understate it) scary. Its depth within our metacrisis means its effects (outputs) cause more significant changes in the other crises (states) which are connected to it (by receiving input). A more shallow crisis does not cause such a storm in the sphere of a metacrisis—nor does its revolutionary resolution. This is what justified the choice to attend to our meaning crisis as a point of focus throughout this book; and, by the same reasoning, it exemplifies why metarevolutionaries always pay attention to the whole complex system of crises, and the deepest crisis within it.

Mark C. Taylor: *"Changes in religion, art, and philosophy influence political, economic, and technological developments, which, in turn, condition cultural evolution. In this way, nature, society, culture, and technology are joined in mutually conditioning and reciprocally transformative feedback loops."*[236]

Because all of these domains co-evolve, and because we wish to achieve the greatest-possible changes with the least-possible energy, a metarevolutionary approach to confronting a metacrisis will involve both understanding and actively harnessing positive and negative feedback mechanisms.

b. Synergy & emergence
Synergy & emergence - in general

Both synergy and emergence are properties of a whole system that are different from those of the parts or elements or subsystems. Let's briefly explore the difference between them, their impact on the science of complexity, and their place within the metarevolutionary worldview. In this book we will use the following distinction:

Synergy: A quantitative difference in the whole compared to the parts.

Emergence: A qualitative difference in the whole compared to the parts.

Beginning with synergy, we observe that when multiple elements/ systems come together to form a new system, some of the variables which define that system have changed: The whole is in some way greater than the sum of the parts. The measure stays the same, but the quantity of the measure is a product of the synergistic effects of the unified complex system. Synergy is found in the dynamic relationship of two or more holons. Even a relatively "simple" system, like two horses connected to a carriage, can produce synergy. A single horse connected to a carriage may be able to pull 5000 pounds on its own. Meanwhile, two horses connected to the same carriage can pull 15,000 pounds—as much as three horses individually. The combination of a cart and two horses into a connected whole has produced synergy.

Buckminster Fuller: *"Synergy alone explains metals increasing their strengths. All alloys are synergetic. Chrome-nickel-steel has an extraordinary total behavior. In fact, it is the high cohesive strength and structural stability of chrome-nickel-steel at enormous temperatures that has made possible the jet engine. The principle of the jet was invented by the squid and the jellyfish long ago. What made possible man's use of the jet principle was his ability to concentrate enough energy and to release it suddenly enough to give him tremendous thrust. The kinds of heat that accompany the amount of energies necessary for a jet to fly would have melted all the engines of yesterday. Not until you had chrome-nickel-steel was it possible to make a successful jet engine, stable at the heats involved."[237]*

Emergence, on the other hand, describes properties of a whole which are not present in its individual parts—in other words, qualitatively different.

Francis Heylighen: *"Complexification can be understood as an increase in both differentiation (greater diversity of components) and*

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integration (greater connectivity between components). We see this in the origin of multicellularity, where the cooperation between cells makes them more dependent on others (integration). Yet, because they can rely on others for common functions (such as provision of food), they can now specialize in particular functions (e.g. reproduction), thus becoming more differentiated."[238]

Daniel Schmachtenberger: *"A cell respirates, even though none of the molecules on their own that make up the cell respirate… And so there is an advantage to those molecules being together from even a thermodynamic perspective."[239]*

Erwin Schrödinger: *"How does the living organism avoid decay? The obvious answer is: By eating, drinking, breathing and (in the case of plants) assimilating. The technical term is metabolism… What then is that precious something contained in our food which keeps us from death? That is easily answered. Every process, event, happening—call it what you will; in a word, everything that is going on in Nature means an increase of the entropy of the part of the world where it is going on. Thus a living organism continually increases its entropy—or, as you may say, produces positive entropy—and thus tends to approach the dangerous state of maximum entropy, which is death. It can only keep aloof from it, i.e. alive, by continually drawing from its environment negative entropy—which is something very positive as we shall immediately see. What an organism feeds upon is negative entropy. Or, to put it less paradoxically, the essential thing in metabolism is that the organism succeeds in freeing itself from all the entropy it cannot help producing while alive."[240]*

Daniel Schmachtenberger: *"So we can say that biologic evolution is a special case of this larger principle by which subatomic particles come into atoms, into molecules... There is a process of increasing complexity, but specifically complexity that doesn't have emergent property doesn't get selected for... So we can say that evolution is defined by these kinds of synergies and increasing complexity."[241]*

Rod Swenson: *"Galaxies, main-sequence stars, cells, ecosystems, civilizations, hydrodynamic structures, and cognitive states in brains are all examples of coherent macroscopic states of matter in motion that come into*

being by the progressive attraction of some subset of accessible microstates from some much larger set of initially accessible microstates. In fact, the progressive complexification of the visible universe from a homogeneous plasma, the emergence of increasingly more highly specified states of matter through the transformation of the incoherent into the coherent, of which bioevolution and cultural evolution are clearly a part, is perhaps the most diagnostic feature of its evolution; it is...what Morowitz has called the 'ascendancy' to increasingly complex levels. Spencer, more than 130 years ago, recognized progressive universal complexification (the creation of new space-time scales of dynamical behavior from the emergence of new levels of macroscopic constraints) as what he called the 'law of evolution'."[242]

The question now becomes: Where will complexification, synergy and emergence lead us? Will they stoke the turbulence of our metacrisis, or be our salvation as metarevolutionaries?

Synergy & emergence - in a metacrisis

Picture fish in a pond and you will be able to understand how the crises in a metacrisis interact as a complex system. They share the water, the sunlight, the food; every movement ripples out and touches other fish. They permeate each other's existence. Our whole world, now expansed by people, societies and global information-communication technologies, is in quite a similar situation. A crisis acts upon itself with circularity (such as positive and negative feedbacks), and interacts with every other crisis to a greater or lesser degree.

In a metacrisis, we witness negative (devaluing) synergies and emergent properties: a new crisis can enter the "pond" of crises; complex systems, once formed, are not reducible to a reductive analysis of its parts, and instead must include the synthetic (holistic) view of the whole; synthesis reveals synergies and emergent properties of the whole which are unique to any specific "mixture" of elements (or subsystems); therefore, the addition or subtraction of any crisis within a metacrisis will potentially lead to a change in its composition of synergistic/emergent properties.

A deep crisis, like our meaning crisis, can be responsible for extremely undesirable synergies with other crises, or even propagate new crises which emerge through crisis interaction. A revolution makes it its task to point to the source of a crisis and take exactly the right action which is needed at that moment to avoid the catastrophe which may accompany either misplaced attention or simply inaction. A metarevolution makes it its task to discover the synergistic and emergent properties in the between-space of crises —knowing that the complex interaction of crises within a metacrisis inevitably leads that unified whole to be different from its holons.

Synergy & emergence - in a metarevolution

We've already begun to see, in contrast to the grim reality of "dark" synergy and emergence within our metacrisis, that these features of complexity are a fundamental part of evolution, and we owe our receptivity to beauty, reason, and love to the ubiquitous presence of these properties in all complex systems. We will return to the evolution of complexity in a later section. For now, it should be sufficient to refer back to what we said about the variety of "states" as a measure for complexity. That consideration led to the Law of Requisite Variety as its conclusion, which stated that for a system to be viable (i.e. to live, in the case of humans and other living systems) it must have a sufficient variety of internal states to absorb the variety of its external states (environment).

Synergy and emergence can be understood, respectively, as the amplification of quantities which exist in individual states, and the creation of new macrostates from the complex interaction of microstates. In other words, synergy can act as an amplifier for variety, making the system-of-systems more likely to thrive relative to the systems composing it. And an emergent property, flowering from new actualizations of value-in-action, may provide a bridge to a better future when, without it, the path would be impassable.

c. Nonlinearity
Nonlinearity - in general

Complex systems are unities that are highly determined by interaction —i.e. the relationship of elements which compose the system. Through interaction, as we've said so far, feedback loops, synergy, and emergent properties arise. Another striking feature is nonlinearity, which may be understood in more than one way. In one sense, it refers to how a change in one state/variable may create a much larger (or smaller) change in another. This can occur in a single instance or over a period of related events.

Consider whether you would rather fall ten times from a height of ten feet, or one time from a height of 100 feet? It's the same total distance, so does it matter? Of course, most people intuitively choose the first option, sensing that a fall from that height might be painful, but that one from 100 feet is a death-sentence. If we increase the number of feet from 10 to 11 to 12 and up to 100, the distance is scaling linearly, but the damage from a fall at each of those heights scales nonlinearly. The same principle informs driving speed limits— where a pedestrian has a less than 20 percent chance of dying from being struck at any speed between 1 and 30 miles per hour, but a grim 80 percent chance of dying when making the relatively smaller jump to 40 miles per hour. Similarly, an earthquake of magnitude-10 is unbelievably more destructive than two earthquakes of magnitude-5. This is the first sense in which we may add nonlinearity to our repertoire of understanding.

The other, related sense, is in a series of events. This is where nonlinearity has been called sensitivity to initial conditions or, more popularly, the "butterfly effect".

Henri Poincaré: *"Small differences in the initial conditions produce very great ones in the final phenomena."*[243]

We have been quite interested in this aspect of nonlinear interactions as we investigated our metacrisis and meaning crisis. A crisis being "deeper" within a metacrisis can now also be understood as relating to its status as an initial condition to which a given metacrisis is nonlinearly sensitive.

To briefly give one other salient example of nonlinear features in our current world, consider the pace of technology's development. Computers help us develop better computers, which help us develop even better computers and so on—and that positive feedback loop produces a nonlinear journey which starts off slow and then jolts into superspeed. Increasingly powerful

technologies like artificial intelligence and biotechnology are poised to radically complement or wholly consume humanity.

Nonlinearity - in a metacrisis

Nonlinearity in the relationships between crises in a metacrisis means that a small change in one can produce a large change in another (or multiple others). It can also mean that as a series of linear changes occur in certain states of a complex system, it can create nonlinear changes in other states. These are yet more reasons we are concerned with deeper rather than more shallow crises. It is supposed that the deepness of a crisis is correlated with the production of larger "shock waves", from changes to that crisis, through the complex system of crises within which it lives. And, as a corollary, certain crises are points of leverage for metarevolutionaries—i.e. to resolve the right crisis at the right time is to maximize one's impact. When this metarevolutionary orientation towards deep crises within a metacrisis is paired with the kind of optimism we discussed, our actions become wed to the most moral, meaningful, and beautiful first principle: the Good.

Nonlinearity - in a metarevolution

Quite simply, revolution is nonlinearity. Often, it is used in the context of political nonlinearity: A radical new law; a new constitution; a coup; war. Yet we hear of technological, scientific, and economic revolutions—and all of these are (at least in theory) valid uses of the word. There is a danger in overusing it, where it essentially becomes a marketing strategy to create excitement or fear, or perhaps both. But there is also a certain danger in underusing it, where it is squeezed into the overly-narrow meaning of "violent, fast-paced political change".

A metarevolution, if nonlinearity is nearly synonymous with revolution, is simply a moment of nonlinear change applied to the underlying conditions of nonlinear change. If the forming of a new government is a political revolution, then a radical change in the metaphysical basis of constitutional law is a political metarevolution—i.e. something with an initial

sensitivity which, if modified, drastically alters all present and future revolutions.

Metarevolutionary theory, then, is applied to a metacrisis in order to understand the "leverage points" within that system. Our question is: What is the smallest change which will produce the largest effect? The answer to this, while not the whole of moral striving, is correlated with moral action. The energy with which we perform any actions is finite; our lives are finite; we must make the most of both.

A metarevolution is directed at all crises and revolutions simultaneously—attempting to take in the whole picture in order to understand the significance of every individual element within it. Arriving at actions which produce nonlinear reverberations—through a metacrisis linked by hierarchical feedback loops—is a straightforward consequence of this kind of metarevolutionary behavior.

d. Fractality
Fractality - in general

They say the "B." in "Benoit B. Mandelbrot" stands for "Benoit B. Mandelbrot". As the "Father of Fractals", his name itself hints at one of their key features: self-similarity. In *"The Fractal Geometry of Nature"* he identifies naturally occurring fractal patterns in plants, coastlines, galaxies, human bodies (as in the branching patterns of veins), and even in some man-made structures like the Eiffel Tower.

Benoit Mandelbrot: *"The tower that Gustave Eiffel built in Paris deliberately incorporates the idea of a fractal curve full of branch points. In a first approximation, the Eiffel Tower is made of four A-shaped structures. Legend has it that Eiffel chose A to express Amour for his work… However, the A's and the tower are not made up of solid beams, but of colossal trusses. A truss is a rigid assemblage of interconnected submembers, which one cannot deform without deforming at least one submember. Trusses can be made enormously lighter than cylindrical beams of identical strength. And Eiffel knew that trusses whose 'members' are themselves subtrusses are even lighter. The fact that the key to strength lies in branch points, popularized by*

Buckminster Fuller, was already known to the sophisticated designers of Gothic cathedrals."[244]

Like the feedback loops and nonlinear patterns explored previously, fractals are a pervasive and yet often-ignored feature of our world. What might seem strange or unexplainable without fractal geometry becomes quite clear when we incorporate it into our worldview.

Benoit Mandelbrot: *"It will be argued that many so-called 'anomalies' coalesce in one major phenomenon that deserves to be investigated on its own."*[245]

Fractals, we will see, convey important principles for complex systems in general. Among its teachings, we find that systems have self-similarity (the whole system is partially reflected in each holon), turbulent behaviors, and non-Gaussian probability curves. So fractal geometry is a way to study and interact with complex systems, and be better equipped to weather the storm of the above behaviors. To take a perfect example, let's discuss financial markets, which illustrate all of these fractal traits at once.

Markets, as almost anyone could tell you, are turbulent—but this commonplace term has a special and precise meaning in our present context. A metacrisis is turbulent, and it is important for metarevolutionaries to understand exactly what this means.

Benoit Mandelbrot: *"The study of turbulence is one of the oldest, hardest, and most frustrating chapters of physics… Should the term 'turbulence' denote all unsmooth flows, including much of meteorology and oceanography? Or is it better to reserve it for a narrow class, and, if so, for which one?… The theory [of fractals] expounded in this book allows a return of geometry into the study of turbulence, and shows that many other fields of science are very analogous geometrically and can be handled by related techniques."*[246]

Financial markets are a microcosm of all the features of complexity we've been exploring. And Mandelbrot spent much time scrutinizing the old view of markets, including the Gaussian or "Normal" distribution of price movements—a probability distribution which is frequently known as "the" bell curve even though it is just "a" bell curve.

Variables such as people's heights tend to fit this type of "normal" distribution. A majority of people, about 68%, are in the middle of the curve—their height is within one "standard deviation" from the average. Within two and three standard deviations, respectively, fall 95.4% and 99.7% of the population's heights. This distribution describes many things, but despite our mightiest efforts, it is not a perfect fit when it comes to financial markets.

Distributions
and the prevalence of outliers

In a normal distribution, nearly all of the events fall within three standard deviations of the average. This means that the system it describes will tend to have very few outliers or extreme events.
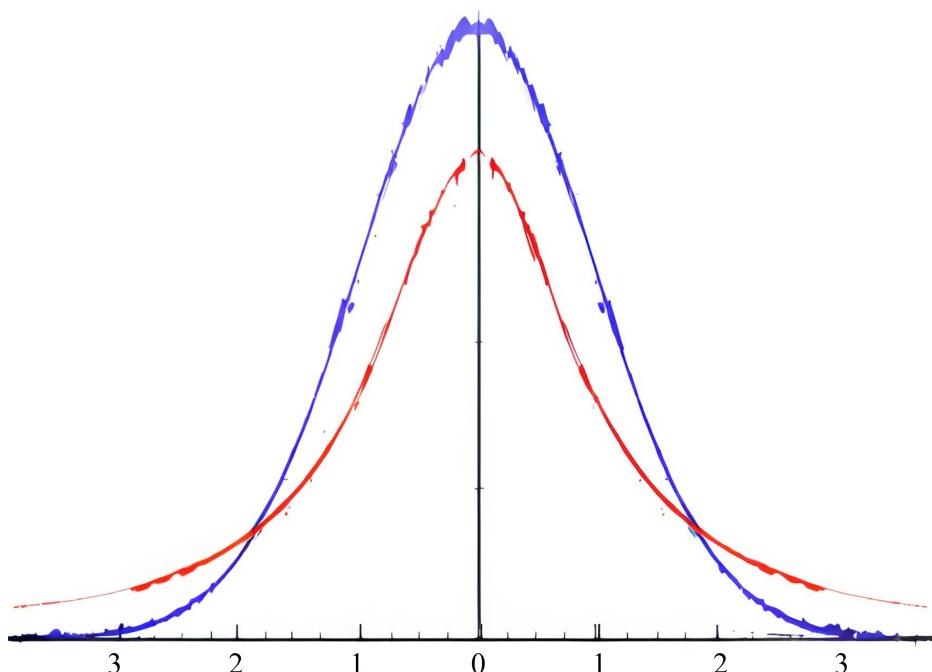
But in a long-tailed distribution, a significant number of events occur beyond three standard deviations. This means that the system will have a relatively high number of extreme outliers.

Benoit Mandelbrot: *"Many scholars resort to the Gaussian probability distribution in their disquisitions, without feeling that this choice has to be justified. Either it is the only distribution they know intimately and trust, or they believe it accounts for the distribution of every random quantity in Nature, from conscripts' heights to astronomers' errors of measurement."*[247]

The "tails" of the Gaussian bell curve are tiny—short tails. Thus, it is fitting for something like human heights. As Mandelbrot tells us, the Gaussian distribution conveys that it is nearly impossible to have an adult human who is a fraction of an inch tall or 3039 feet tall—many, many deviations from the average. The "tail events" are indeed exceedingly rare and quickly taper off into near-impossibility. But in complex systems such as financial markets, that is not the case. The Gaussian bell curve says that market crashes of a certain scale are so unlikely that they should not be expected even in a billion years of trading. The fact that a single century has had multiple crashes of this magnitude shows clearly the inadequacy of the Gaussian distribution for many aspects of complex systems.

The so-called "normal" bell curve is a miscalculation of volatility, of risk, when applied to markets and many complex systems of all types. The fractal view, on the other hand, helps to expose the weakness of the mechanistic-reductionist approach (and its related assumptions) as applied to financial complexity.

Although Mandelbrot does not explicitly use terms like "synergy" or "emergence", he describes the combination of stock traders, banks, institutional investors, and exogenous factors like weather events into something that is not just a simple combination of its parts. Thus, traditional tools of financial analysis are insufficient. Analysis, by definition, looks to explain a thing by examining parts of a whole. Complex systems, like financial markets, can be better understood through the relationships and interactions of their holons or subsystems, which altogether generate synergetic and emergent properties. This led Mandelbrot to further distance himself from other financial analysts on the matter of market efficiency.

Benoit Mandelbrot: *"The hypothesis holds that in an ideal market, all relevant information is already priced into a security today. One illustrative possibility is that yesterday's change does not influence today's,*

nor today's, tomorrow's; each price change is 'independent' from the last…
According to the theory, a fund manager can build an 'efficient' portfolio to
target a specific return, with a desired level of risk."[248]

Mandelbrot's work rejects this, and uses the insights of fractals to create a more accurate picture of financial markets. He gives the example of widely-used stock-trading strategies, and how their acceptance as analytical tools create feedback loops. If a certain "chart pattern" is accepted as a signal to buy a stock, then its appearance will cause people to place trades. The price changes, but not because it efficiently accounted for the best-available information. Rather, human behavior influences the price, and the resulting price affects our behavior, which affects the price again. As Rowson said about chess, systems may be merely "complicated" when viewed in isolation, but a chess game in progress is a complex system involving the game and the people playing it. The same is true of stock markets and the way that human psychology enters the price equation.

Finally, markets (and other complex systems) operate according to a clock of their own—in this case, "trading time". Market volatility is much like the passing of a week in our lives where it seems like a decade's worth of change has occurred. These findings of the fractal features within markets are summarized below.

The 5 Fractal Rules of Markets are…
Long tails - more risky than the Normal Distribution. Tail-events are more frequent and more extreme
Dependence - Price changes are not like a series of coin tosses whose results are independent of each other
Synergy & emergence - Markets are complex systems, and the whole has different properties than its parts
Inefficiency - Feedback loops and external complexity create price bubbles and other distortions of "efficient market" prices
Relative time - Trading time expands or compresses clock time, yielding "slow" and "fast" markets.
Credit: Benoit B. Mandelbrot & Richard L. Hudson, "The (Mis)Behavior of Markets"

Fractality as a general feature of complex system conveys how holons reflect a holarchy, and vice versa. Or, in other words, the "parts" and the "whole" are alike. The reason for their prevalence is in fact their relative simplicity—as in, they also demonstrate how great complexity is built from a few basic units and simple rules for their dynamic interaction.

Benoit B. Mandelbrot: *"Fractal shapes of great complexity can be obtained merely by repeating a simple geometric transformation, and small changes in parameters of that transformation provoke global changes. This suggests that a small amount of genetic information can give rise to complex shapes and that small genetic changes can lead to a substantial change in shape."[249]*

Fractals can also help us understand risk and reward as we interact with and within complexity. Our habitual misunderstanding of risk is a crisis of its own within our metacrisis, and it threatens to derail all of our other metarevolutionary efforts. A proper relationship with risk, where we understand it and accept it and use it to our advantage, will lead us to a better world.

We should think of crises as having a certain "magnitude" in their effects, and at once remember that an event of a very high magnitude (like a 9.5 on the Richter scale for earthquakes) may be more likely than we think. As in, at any given time, a metacrisis is a distribution of distributions, itself representing a collection of possible and actual states which the whole system may occupy, and continually evolving as a metadistribution or multifractal.

Fractality - in a metarevolution:

One direction we might take in light of this information is to use a Markov-switching multifractal model of risk, as suggested by two of Mandelbrot's students. In this way, fractals can help us accurately measure our risk-level at any moment, and thereby find a harmonious middle between recklessness and trepidation. To foreshadow what this change would mean for

the world as a whole, recall how the Gaussian distribution is a miscalculation of actual risk, and therefore leads us into a precarious comfort made of illusory safety. That is a situation in which we face the potential catastrophic collapse of multiple systems at once, possibly including entire societies or ecosystems. A fractal model of risk, on the other hand, shows us the long tails of system volatility. With a proper "risk profile", we will have guidance in our relationship with risk, and therefore be able to maximize reward (pursue the perfection of value) without overextending ourselves.

In a deeper sense, fractals enter into the metarevolutionary *ethos* as further proof that everything is at least a little like everything else. The universe is composed of nested, self-similar holons, and even the theoretically "smallest" holon contains a mirror-like reflection of an ungraspable infinity.

e. Fragility & antifragility
Fragility & antifragility - in general

We have said that complexity has much to do with interconnection—holons coming together into an integrated, more complex holon (or holarchy) which is difficult to disentangle. Once formed, the complex system takes on traits and behaviors which are emergent properties—features which would disappear if the system broke apart. Stability, then, is the measure of how easily a system may break. And this measure falls within a spectrum of fragile to antifragile. People and dogs and societies and markets and ecosystems are all complex systems and thus contain this property.

Nassim Nicholas Taleb: *"Some things benefit from shocks; they thrive and grow when exposed to volatility, randomness, disorder, and stressors and love adventure, risk, and uncertainty. Yet, in spite of the ubiquity of the phenomenon, there is no word for the exact opposite of fragile. Let us call it antifragile. Antifragility is beyond resilience or robustness. The resilient resists shocks and stays the same; the antifragile gets better. This property is behind everything that has changed with time: evolution, culture, ideas, revolutions, political systems, technological innovation."*[250]

Taleb, who coined "antifragile", describes three main categories of system stability—fragile, robust/resilient, and antifragile—with a

mythological example. Damocles, representing fragility, has a sword hanging over his head. It is suspended by a strand of hair, which gets weaker from the weight of the sword. It's a matter of time before the sword falls upon the man in its path. The phoenix, a bird with resilience, is continually reborn from its own ashes—getting no weaker or stronger from stress. And finally, the Hydra regrows two heads each time you cut one off. As Taleb puts it, this antifragile creature *"gains from disorder"*.

Martin Monperrus: *"In Taleb's view, a key point of antifragility is that an antifragile system becomes better and stronger under continuous attacks and errors. The immune system, for instance, has this property: it requires constant pressure from microbes to stay reactive… A system is antifragile if it thrives and improves when facing errors. Taleb has a broad definition of 'error': it can be volatility (e.g. for financial systems), attacks and shocks (e.g. for immune systems), death (e.g. for human systems), etc."*[251]

As with our discussion of fractal turbulence, we must consider how fragility and antifragility can affect a metacrisis or metarevolution.

Fragility & antifragility - in a metacrisis

Antifragility, as a measurable waypoint of systemic health, is part of the all-important relationship between holons at different scales of nested holarchies. Viewing the whole system together, properties like fragility come about as a result of a complex interaction of people, institutions, and their environment. Yet we do not look to the whole system for all of our insights. A fragile or antifragile system depends on every "layer", as it were, just as in our metacrisis we can't totally isolate any individual crisis from the others. The stability of a larger system depends, to some degree, on the stability of the smaller systems which compose it. In that sense, stability is an instance of synergy (as a quantitative phenomenon): Subsystems are more fragile or antifragile, and the larger system in which they are integrated may be either more or less fragile than a simple sum of subsystem fragility.

Further, it is clear that it is not enough to address our meaning crisis— we must address any such crisis in relation to every other one within our metacrisis. Metarevolutionaries seek coherence. If we are on the road which

leads to the recovery of meaning, we must simultaneously attend to the many features and behaviors of complex systems, such as its stability, or else we risk the wheels coming off the proverbial vehicle before we reach that destination. In the second half, we will have to find ways to move our systems in the direction of antifragility as part of the same metarevolutionary process which resolves our meaning crisis.

Before we move on, let's explore a few examples of systemic fragility in order to understand how stability relates to our complex system of crises. In speaking of people within a society, each member can be relatively fragile or antifragile to any number of risks. Yet, the antifragility of the whole system is not just an additive measure (or "heap") of these individual risk-profiles, but rather has its own unique measure of fragility based on the complex interactions between every one of these holons.

Ervin Laszlo: *"In the biosphere of the Earth, organic systems interact with one another, mutually eliciting creative responses. The progressive transformation of organic species pushes the front of evolution forward, exploring various forms and possibilities, each tending to be more complex than the foregoing. Some are successful, others fail. Even minor factors, such as a drop of a few degrees in the average annual temperature, can produce major effects, as modifications snowball and get magnified in the process. The demise of the dinosaurs, after the longest undisputed reign of any species on earth, bears testimony on this point."*[252]

The systems we've built rely heavily on each other, so a failure in one area tends to cascade through the rest.

John Casti: *"The systems that underwrite our lifestyle are completely intertwined: the Internet depends on the electrical power grid, which in turn relies on energy supply from oil, coal, and nuclear fission, which likewise rests on manufacturing technologies that themselves require electricity."*[253]

This is a feature called "strong links"—which might sound like a good thing, but actually contributes to fragility. "Weak links" on the other hand, is a feature we will explore in the second half of this book as a design principle of antifragility. As in, we live in a universe of interconnected systems, and we aspire to shape societies in which, should some system suffer a catastrophic

failure, its links to other systems will "break"—isolating the event rather than allowing it to propagate through a chain of strong links.

Our discussion of fractals has already illuminated the next feature of fragility, which is risk-mismanagement. This will lead us to consider the "value-at-risk" of our actions and systems—in other words, how to relate to risk in a way which maximizes reward.

A final contributing factor is whether we hide from risk, or bravely confront it. Fragility results from the habit of denying the existence of risk; antifragility results from the habit of active failure (or the "fail fast" principle). We will return to this subject later and discuss chaos engineering.

Fragility & antifragility - in a metarevolution

The metarevolutionary mode is one that is oriented towards developing the antifragility of holons, accurately modeling risk as to maximize reward, collectively generating predictions which help us navigate the future, and transcending catastrophic and existential risks whenever possible.

When we move the discussion from crisis to action in the second half of this book, it will become clear why antifragility is a crucial aspect of the metarevolutionary trajectory. Our success or failure, indeed our very survival, depends on the measure of fragility or antifragility which is present in every center of action, whether that is a person, a city, or a planet.

1.2.3

THE EVOLUTION OF COMPLEXITY

"That which is compounded out of something so that the whole is one…[is] not like a heap but like a syllable—now the syllable is not its elements, ba is not the same as b and a."[254]

- Aristotle

What are complex systems doing? And why? If monads self-organize into increasingly conscious complexes, what is responsible for this evolutionary direction? Addressing these questions will shed light on the general tendencies of complex systems, and will have numerous implications for metarevolutionaries.

To see where we are in the big picture of things, let's remember that reality is composed of possibility and actuality; the Good is the metaphysical first principle of everything; actuality is a plenum of monads which express value-in-action; and these centers of complexity-consciousness evolve as moral agents with the duty of pursuing the perfection of everything.

If Action were to refer only to itself, and never to anything beyond itself, the dead-end of materialistic nihilism is reached. Conversely, if Action is always attached to, and, indeed, subservient to, Value, then there is a thermodynamic basis for natural law and moral realism—i.e. optimism. Use and misuse of Love's potential to actualize the Good is the fundamental concern of ethics. Experientially, we perceive this as the use and misuse of energy.

This means that as we trace the path of complexity's evolution, we will be drawing a parallel path of the evolution of morality—which, at the same time, is the ascent of love, freedom, beauty, and wisdom. And, as a whole, we will address the *telos* of complex systems—which is to say that all of the preceding units, features, and behaviors of complexity are oriented towards some end or "goal state".

Francis Heylighen: *"Such explanation is called 'teleological', from the Greek 'telos', which means 'end'."*[255]

Now we are ready to address the nature of that orientation or direction of complexity. We must understand the "needs" or "ends" to which complex systems of all types are directed. Understanding the most general teleological features of complexity will grant insight into our specifically human condition, our moral *telos* which involves the discovery of meaning, and the cumulative effects of its present neglect—which has reached the point of crisis.

Francis Heylighen: *"The end to which they converge is called an attractor."*[256]

Bobby Azarian: *"An attractor is a set of states or configurations that a dynamical system naturally tends to evolve toward, regardless of its 'initial conditions'—how the system started off. Think of a ball rolling down a hill into a valley. The basin of the valley is an attractor. It doesn't matter where on the hill the ball started off, it's eventually going to end up at the bottom. And because being at the bottom represents a state where the system has minimized its potential energy, once the ball gets there, it typically stays there. Of course, an injection of energy could move it out of the attractor, but escaping the attractor does not happen spontaneously."[257]*

Francis Heylighen: *"[So any] attractor is surrounded by a basin of attraction. This consists of all the states whose trajectories converge to the attractor... In order to differentiate a goal-directed system, such as a living organism, from a system that merely settles in a stable equilibrium, such as a ball ending up at the bottom of a bowl, we [add] the requirement that the attractor should correspond to a far-from-equilibrium configuration, i.e. one that requires input of energy in order to reach and maintain."[258]*

Erwin Schrödinger: *"When a system that is not alive is isolated or placed in a uniform environment, all motion usually comes to a standstill very soon as a result of various kinds of friction; differences of electric or chemical potential are equalized, substances which tend to form a chemical compound do so, temperature becomes uniform by heat conduction. After that the whole system fades away into a dead, inert lump of matter. A permanent state is reached, in which no observable events occur. The physicist calls this the state of thermodynamical equilibrium, or of 'maximum entropy'... It is by avoiding the rapid decay into the inert state of 'equilibrium' that an organism appears so enigmatic; so much so, that from the earliest times of human thought some special non-physical or supernatural force (vis viva, 'entelechy' [from the Greek roots: 'en' meaning 'in', 'telos' meaning 'end' or 'perfection', and 'ekhein' meaning 'to be in a certain state']) was claimed to be operative in the organism."[259]*

Francis Heylighen: *"[This] present conception of goal-directedness [or entelechy]...does not imply any mysterious design, retro-causality, vital force or conscious intention; complements causal explanations by pointing out likely final states that cannot be predicted by computing trajectories from*

initial states; thus, can be used to formulate falsifiable predictions about the behavior of a goal-directed system can be formalized and operationalized using the dynamical systems notions of attractors and basins; captures our intuitive sense of goal-directedness as the persistent and concerted action to attain and maintain a goal state in the face of perturbations; explains how goal-directedness may have originated and evolved."[260]

It is typical, in political manifestos, to directly address human goals, ends, or needs. Perhaps they are addressed to social, environmental, or economic domains. There is an assertion of what is, what could be, and what should be. There is a time and place for such discussions, but presently we must "step back to leap" if we wish to be metarevolutionary.

Arthur Koestler: *"In other words, we are faced here with the same pattern of reculer pour mieux sauter, 'step back to leap', which we have encountered at the critical turning points in the evolution of science and art. Biological evolution is to a large extent a history of escapes from blind alleys of over-specialization, the evolution of ideas a series of escapes from the tyranny of mental habits and stagnant routines."[261]*

We must understand the underlying conditions of our metacrisis, and, indeed, life itself, in order to address any and all crises we face—which, finally, means discovering the Good, which is the *telos* of all action. Our crises loom large, so let's take a big step back.

600 million years ago, something incredibly important was going on —something with relevance to metarevolutionaries in the 21st Century and beyond.

Fred Adams: *"In considering the origin of life, the first environments under the microscope are the 'warm little ponds' that have been discussed ever since Darwin. The theory of biological evolution, as put forth…in his Origin of Species, was a major scientific revolution of the nineteenth century… From these simple beginnings, physical systems of increasing complexity emerge. At some point in the procedure, the complexity of a physical system increases sufficiently so that the organism becomes alive. Life arises from lifeless chemistry, albeit in natural stages of increasing complexity."[262]*

Our ancestors from that long-ago time had problems just like we do today—maybe a little different. But even the earliest animals had to eat, compete, and procreate in a dangerous world.

Peter Godfrey-Smith: *"Aeons ago, animals were just one of various unruly clumps of cells that started living together as units in the sea. From there, though, some of them took on a particular lifestyle… No one knows what the animals in question looked like in any detail, but they perhaps had the form of small, flattened worms. They may have been just millimeters long, perhaps a little larger. They might have swum, might have crawled on the sea floor, or both. They might have had simple eyes, or at least light-sensitive patches, on each side. If so, little else may have defined 'head' and 'tail.' They did have nervous systems. These might have comprised nets of nerves spread throughout the body, or they might have included some clustering into a tiny brain. What these animals ate, how they lived and reproduced—all are unknown."[263]*

Sensing and processing basic information predicated on the survival needs of the current moment ultimately becomes human consciousness predicated on dreaming about an increasingly beautiful future. So, although Earth and life were very different, our senses, intelligence, and many important features of human experience can be traced back to some pivotal changes which happened during the Cambrian era. In one particularly momentous moment of evolutionary selective pressure, some of these creatures developed rudimentary "eye-spots" for sensing their environment and perceiving information. Nothing like modern eyes or brains yet existed, but one can argue that this was a very special time which marked the beginning of an exponential curve in information processing and foretold the appearance of human intelligence.

Peter Godfrey-Smith: *"The Cambrian witnessed the appearance of both the compound eyes seen today in insects and camera eyes like our own. Imagine the behavioral and evolutionary consequences of being able to see the objects around you for the first time, especially objects at some distance and in motion. The biologist Andrew Parker has argued that the invention of eyes was the decisive event in the Cambrian… As the paleontologist Roy Plotnick and his colleagues put it, the result of this sensory opening was a*

'Cambrian information revolution.' With an influx of sensory information comes a need for complex internal processing."[264]

Those early animals with more sophisticated ways of sensing and acting simply had a better chance of surviving. So when those first-generation eyes blinked into existence, nothing would ever be the same. There was an evolutionary pressure to have the most information, but also to be able to process it in more advanced ways, such as by making predictions and abstractions based on that sensory input. Those eye spots marked the beginning of an information and intelligence explosion: Having more information about the world means being able to take better actions, which in those early days were all about meeting the basic survival needs of life. The Law of Requisite Variety ruled the day, and life raced towards complexification because as Ashby and others have said, only variety absorbs variety.

Peter Godfrey-Smith: *"Why did it happen then, and why did it happen so fast? The timing may have had to do with changes to the Earth's chemistry and climate. But the process itself may have been largely driven by a kind of evolutionary feedback, due to interactions between organisms themselves. In the Cambrian, animals became part of each other's lives in a new way, especially through predation. This means that when one kind of organism evolves a little, it changes the environment faced by other organisms, which evolve in response. From the early Cambrian onward there was definitely predation, together with everything that predation encourages: tracking, chasing, defending. When prey starts to hide or defend itself, predators improve their ability to track and subdue, leading in turn to better defenses on the prey side. An 'arms race' has begun.*"[265]

But being human, we say, is about much more than surviving. We can dream bigger than any tiny Cambrian flatworm could have dreamt. Thus we have higher-order needs—which are nonetheless built on the same principles of information, energy, and action. Life must answer to certain fundamental concerns, and those primordial challenges form our present focus.

In order for metarevolutionaries to create, as Carl Sagan once wrote, *"realistic maps of a world we can be proud to give to our children"*,[266] we must build upon the most basic drives of life, of which free-energy

minimization is a prime example. Metarevolutionaries are concerned with the foundational conditions of all change. And the free-energy principle is about how life resists the disorder which is the natural direction of things—and, as such, is one of the most important aspects of meeting our needs, however complex. Meeting these needs, in turn, opens new opportunities for the actualization of yet-to-be-fulfilled potential.

During that time in the Cambrian, an exponential increase in the complexity of life began—driven by the need to perfect the processes of perception, prediction, and action. And, as it turns out, these processes are still at the foundation of everything. These underlying currents of evolution may act as a riptide to the unknowing, but may also be harnessed by the wise.

To appreciate why the appearance of eyes was a significant factor in this nonlinear period of change in our evolutionary past, let us get acquainted with the "why" of evolution. We shall see that it is not a blind process. The idea that evolution has a naturally-determined direction or tendency has been expressed by a number of different, partially overlapping theories. In short, though, evolution is driven by a thermodynamic and information-theoretic *telos*. And there is no hard line between cosmogonic and biological evolution. Such a theory, that evolution has a direction but is not supernaturally ordained, can be stated in terms of the free-energy principle (FEP), maximum power principle (MPP), maximum empower principle (MEP), or dissipative (negentropic) systems.

Constantino Tsallis: *"Thermodynamics…is based on two most relevant concepts, namely energy and entropy. The German physicist and mathematician Rudolf Julius Emanuel Clausius introduced the concept of entropy in 1865… He coined the word from the Greek 'tropē', meaning transformation, turning, change. Clausius seemingly appreciated the phonetic and etymological consonance with the word 'energy' itself, from the Greek 'energeia', meaning activity, operation, work."*[267]

Ramstead, Badcock, & Friston: *"As Schrödinger famously observed many years ago, living systems are unique among natural systems because they appear to resist the second law of thermodynamics by persisting as bounded, self-organizing systems over time. How is this remarkable feat possible? What is life?"*[268]

Mark C. Taylor: *"Living organisms take in energy from the world around them and release heat into the environment through their metabolic processes. This heat increases entropy, which has been thought to contribute to the ultimate heat death of the universe. While individual organisms are necessarily open, the universe seems to be a closed system. Every closed system, Norbert Wiener explains, inevitably moves toward the entropic state of equilibrium: 'As entropy increases, the universe, and all closed systems in the universe, tend to deteriorate and lose their distinctiveness, to move from the least to the most probable state, from a state of organization and differentiation in which distinctions and forms exist, to a state of chaos and sameness.' The term 'negentropy,' which was coined by Erwin Schrödinger in his seminal book 'What Is Life?', is negative entropy. Whereas entropy represents the absence of differences constitutive of organizational structure, negentropy designates the opposite state, which occurs when differentiated structures, systems, and networks emerge in the midst of disorder. Ilya Prigogine and Isabelle Stengers label the islands of negentropy that emerge in the midst of entropy 'dissipative structures.'… [Norbert] Wiener continues: 'But while the universe as a whole, if indeed there is a whole universe, tends to run down, there are local enclaves whose direction seems opposed to that of the universe at large and in which there is a limited and temporary tendency for organization to increase. Life finds its home in these enclaves.'"[269]*

Bobby Azarian: *"As the number of challenges posed by an environment grows, so does the size of the mental repertoire that is required to respond to those challenges… Now we can see the connection between the second law of thermodynamics and the Law of Requisite Variety. Adaptive complexity must continually expand the size of its repertoire of cognitive states to deal with the growing list of thermodynamic challenges it faces (those problems that threaten its far-from-equilibrium existence)… We should no longer think of the universe as trying to produce entropy at the fastest rate possible; the universe is self-organizing at the fastest rate possible, and the increase in entropy is just the energetic cost of the work required to construct cosmic order."[270]*

This sheds light on why complex systems must answer to certain fundamental goals or needs, and why evolution will tend towards certain patterns.

The feedback loop of life involves the perception of information (e.g. with eyes), processing and making predictions about what information you are going to sense next (e.g. with brains), and using action (e.g. with bodies) to change one's external states, and once more perceiving external states in their relationship to internal states—the internal states are predictions of external states, and life persists if and only if the internal states vector towards an accurate mapping of external states. This is what Karl Friston calls the free-energy principle (FEP).
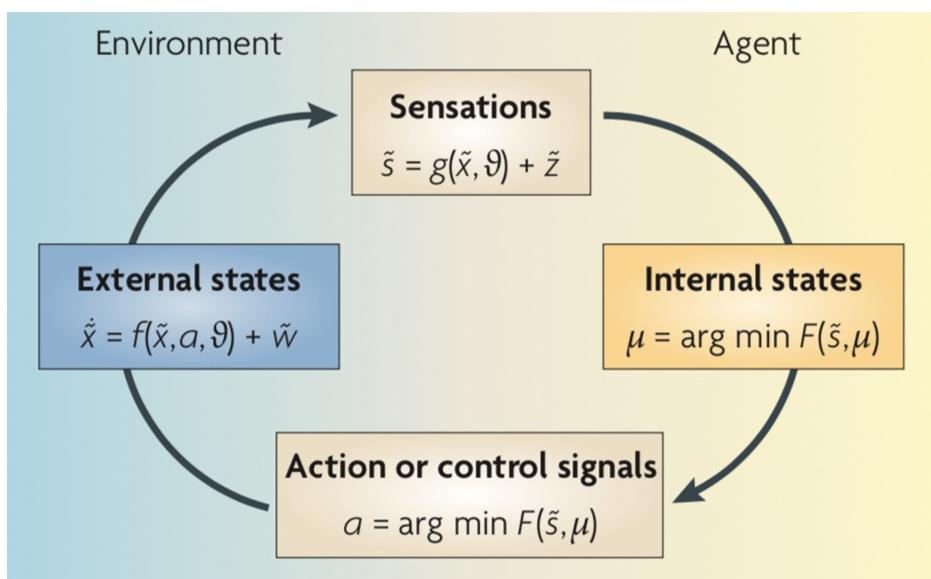
Credit: Karl Friston, "The free-energy Principle: a unified brain theory?"

Karl Friston: *"The free-energy principle says that any self-organizing system that is at equilibrium with its environment must minimize its free-energy. The principle is essentially a mathematical formulation of how adaptive systems resist a natural tendency to disorder."*[271]

Anil K. Seth: *"Free-energy is the long-run sum of prediction error… The FEP says that organisms obey a fundamental imperative towards the avoidance of (information-theoretically) surprising events, according to which*

they must minimize the long-run average surprise of sensory states, since surprising sensory states are (in the long run) likely to reflect conditions incompatible with continued existence… 'Surprise' is not used here in the psychological sense, but in an information-theoretic sense—as the negative log probability of an event's occurrence (roughly, the unlikeliness of the occurrence of an event)."[272]

Ramstead, Badcock, & Friston: *"Technically, free-energy is an information theoretic quantity that limits (by being greater than) the entropy of sensory exchanges between a biotic system (e.g., the brain) and the environment. A generative model is a probabilistic mapping from causes in the environment to observed consequences (e.g., sensory data)."[273]*

Schwartenbeck, FitzGerald, Dolan, & Friston: *"[The FEP's] underlying premise is that a biological system, in order to underwrite its existence and avoid the dispersion of its physical states, has to maintain its states within certain bounds and, therefore, maintain a homeostasis."[274]*

Put otherwise, a probabilistic relationship between an action-center's internal states and the external states (environment) it encounters is the basis for life's self-perpetuation. The dynamic (dis)connection between the two is called a "Markov blanket". And if this process continues to break down, it spells doom for our metacrisis.

Karl Friston & Ping Ao: *"Action and sensation form a Markov blanket separating external and internal states. In other words, external states are 'hidden' from the agent's internal states. We will therefore refer to external states as hidden states. The notion of a Markov blanket refers to a (statistical) boundary between the internal and hidden states of an agent."[275]*

Ramstead, Badcock, & Friston: *"[Following from this,] free-energy…describes the probability distribution encoded by the internal states of the Markov blanket. Note that this is different from surprise, which is a function of the states of the Markov blanket itself. In other words, free-energy is a function of probabilistic beliefs, encoded by internal states about external states (i.e., expectations about the probable causes of sensory input)… [And] living systems can be described in terms of hierarchically nested Markov blankets."[276]*

Andy Clark: *"Perception, action, and attention, if these views are correct, are all in the same family business: that of reducing sensory prediction error resulting from our exchanges with the environment."*[277]

To address an intuitive concern which comes to mind with this principle of complex systems, it should be noted that minimizing surprise through Bayesian updating of one's Markov blanket does not lead to the "Dark and Empty Room Problem"—i.e. the mandate to minimize free-energy does not push life into corners of paranoid safety.

Schwartenbeck, FitzGerald, Dolan, & Friston: *"In some contexts—agents are compelled to seek novel states, whereas in other contexts they maximize expected utility… Indeed, under certain circumstances, surprise can be minimized (i.e., model evidence can be maximized) if an agent selects a policy that increases the likelihood of visiting new and informative states. The concept of surprise minimization, therefore, by no means precludes agents from active exploration or appreciating novelty but rather explicitly predicts that this is an important factor in guiding our behavior."*[278]

One must consider the *telos* of individual living systems to fully appreciate what constitute its "surprising" states. For simpler creatures, the FEP has implications for survival behaviors, as in when a creature expects to be safe in a certain setting, but will update the mapping that exists in its Markov blanket if it is attacked by a predator. For humans, however, we have the capacity and duty to discover meaning and actualize the Good; so, indeed, surprise occurs when a species expects its actions to be correlated with meaningfulness, but are met with a meaning crisis. Meaninglessness is surprising to meaning-attuned creatures. Which, altogether, says that there is a thermodynamic basis for natural law: Value is possible; Action is thermodynamically limited; their ideal relationship (the maximum perfection of actual value given finite conditions) is the *telos* of all life; and free-energy measures "dis-attunedness" with one's environment, whether that mismatch is physiological or spiritual.

Jelle Bruineberg & Erik Rietveld: *"Roughly, free-energy is a measure for the 'dis-attunedness' of the internal dynamics and the environmental dynamics. For example, it is low when the sensory states are anticipated, and high when they are not."*[279]

Anil K. Seth: *"[And] the agent can only maintain a lower limit on surprise by minimizing the difference between actual sensory signals and those signals predicted according to a generative or predictive model. This difference is free-energy."*[280]

Since we are primarily concerned with the love story of Value and Action, and a theory of revolutionary change in the underlying conditions of revolution, the FEP is a central concern. Similar notions can be found in the "Maximum Power Principle" (MPP), and/or formulations of the same pattern which focus on "empower" or else "maximum entropy production". The common theme is that evolution has naturally-ordained tendencies and goal-directedness based on physical and thermodynamic laws. These form a coherent whole with the natural, metaphysical laws already discussed.

Any organism or complex adaptive system has as a goal (in its overall value hierarchy or *telos*) to maximize their rate of energy (or emergy) intake and use, and to minimize free-energy. Through the process of internal cognitive processes like abstraction and prediction, as well as sensation of the external environment, and goal-mediated interaction with it, a living organism makes predictions about itself (internal states) and its environment (external states), and takes actions aimed at minimizing surprise/maximizing value—thus limiting its internal states to the desirable ones. Then, using sensation as feedback, adjustments to the next round of predictions/actions allows the organism to resist disorder and maintain themselves in the far-from-equilibrium states of living and flourishing.

Patrick Mellor: *"Lotka was the first to suggest a fourth thermodynamic law, which he termed 'the maximum power principle' [MPP], applying specifically to living systems."*[281]

Cai, Olsen & Campbell: *"The MPP was originally formulated by Lotka to characterize the effect of selection among individual organisms, species, or groups (of two or more species) on the entire system of energy transformations in which they participate."*[282]

H.T. Odum & Elisabeth Odum: *"[From this] we learn a common pattern of transformation of energy. This pattern produces some energy with increased quality, stores it as assets, and then uses its special qualities as feedback to help draw in more energy… The maximum-power principle may*

also be stated as follows: Those systems that survive in the competition among alternative choices are those that develop more power inflow and use it best to meet the needs of survival. They do this by: (1) developing storages of high-quality energy, (2) feeding back work from the storages to increase inflows; (3) recycling materials as needed; (4) organizing control mechanisms that keep the system adapted and stable; and (5) setting up exchanges with other systems to supply special energy needs."[283]

Patrick Mellor: *"This minimal conception of the properties of any living system results in general laws which apply across all such systems… This gives us some warrant to suggest that naturalistic moral facts apply across all possible worlds allowing self-organization."[284]*

This last point deserves further attention. What makes all of this a moral process rather than just an energetic one? The point we hope to make here is that Action is always the carrier of Value—Action lovingly perceives Value with greater or lesser clarity, and comes to resemble it in related degrees of perfection. It is, itself, the bridge between the possibility of perfected value (the Good) and an actuality of contextual value (meaningfulness). Value is real, absolutely—thus we live in a spiritual plenum (physical and metaphysical "space" pervaded completely by Value) instead of a nihilistic Flatland. As bearers of consciousness, we therefore have a thermodynamically-constrained moral duty to make the most of the Good—to perfect actuality as much as we can given our finitude. Each monad attempts to "imagine" (or represent) Monas Monadum. This is true optimism.

Given our human condition within the framework of a thermodynamic natural law, we can see how our meaning crisis and metacrisis have, at their core, the romance of Value and Action. Our meaning crisis is an actuality trending in the wrong direction—truly, an antimoral direction. So how might we use this knowledge in our metarevolution? In what follows, we are seeking a metarevolutionary solution to our meaning crisis—or, in other words, a solution which is itself a symbol, and points beyond itself to other domains of our metacrisis.

The question above leads us to one of the most important implications of complexity for metarevolutionaries. The FEP and MPP help explain why this evolution occurs; what follows will show how it occurs. If, as we claim,

all complex systems are evolutionary, we will need to elucidate the processes and forces by which these systems become complex, which include self-organization or autopoiesis, free-energy minimization and empower maximization, and the phase shifts and metasystem transitions which punctuate the timeline of our history and future.

Bobby Azarian: *"A phase transition refers to a sudden holistic change in the overall arrangement of a system's structure, and in turn, its function. Most people are familiar with basic phase transitions, taught in high school chemistry, such as liquid water freezing into ice under cold temperatures. During this phase change, the H2O molecules are transformed into a more stable and orderly configuration, from a liquid phase to a solid one. More complicated phase transitions occur in nature when a group of interacting components self-organize into a coordinated and stable collective entity… Non-equilibrium phase transitions are critical to the story of cosmic evolution, since they provide the mechanism through which new levels of complexity and organization spontaneously come into existence."*[285]

Action is self-organizing—building itself up into more complex and more conscious action-centers.

Francis Heylighen: *"Contemporary science sees societies, organisms and brains as complex adaptive systems. This means that they consist of a vast number of relatively autonomous agents (such as cells, neurons or individuals) that interact locally via a variety of channels. Out of these nonlinear interactions, some form of coherent, coordinated activity emerges—a phenomenon known as self-organization."*[286]

Teilhard de Chardin: *"If we look at things correctly, the 'centricity' of an object does not correspond in the world either to an abstract quality or to a sort of 'all or nothing' with no half-tones or degrees of intensity. It represents, on the contrary, a magnitude that is essentially variable, proportionate to the number of elements and interconnections contained in each cosmic particle under consideration. A center is the more simple and profound, the greater the density and the wider the radius of the sphere in which it is formed. A center does not simply exist, it builds itself up… In consequence, there is an infinite number of disparate ways in which matter can become centered. Along the axis of complexity, everything around us*

happens as though the stuff of the universe were distilled into a rising series of continually more perfect centers."[287]

Humberto Maturana & Francisco Varela: *"[Therefore,] a complex system is defined as a unity by the relations between its components which realize the system as a whole, and its properties as a unity are determined by the way this unity is defined… It is these relations which define a complex system as a unity and constitute its organization."*[288]

Self-organization is the way complexity emerges and builds itself up. Every complex is a holon: a unity of less complex holons, as well as a present or future part of an even greater, more complex holon. Equally, every complex is composed of monads: Reality is composed of these embodied units of quality, or quantity-quality metasystems, whose unique perceptions and appetites disambiguate them from other monads.

Patrick Mellor: *"[So we find that] the simplest possible definition of life is as a self-organizing system which generates local complexity by exploiting an energy gradient, while still obeying the second law of thermodynamics by producing a net increase in entropy in the universe as a whole."*[289]

Bobby Azarian: *"A gradient is the difference between two interacting systems that creates instability, whether it be a difference in temperature, pressure, chemical concentration, or electrical charge. If such a difference exists, there will be spontaneous flow from one system to the other until that difference, or the gradient, is eliminated, and a stable and inert state of equilibrium is achieved."*[290]

Patrick Mellor: *"In [H.T.] Odum's formulation, 'the maximum power principle can be stated: During self-organization, system designs develop and prevail that maximize power intake, energy transformation, and those uses that reinforce production and efficiency.'"*[291]

Cai, Olsen & Campbell: *"Because…system elements can be reinforced selectively by an increased flux of available energy, [Lotka] postulated that a general tendency toward increased available energy flux through the system will characterize its evolution, toward the maximum power compatible with thermodynamic, environmental, and biotic constraints… Odum suggested that the designs that prevail in self-organizing systems are*

those that maximize useful power (i.e., the rate of acquisition of available energy that is subsequently used to reinforce production through increased energy acquisition and gains in efficiency), as such reinforcement increases the capacity for adaptation to prevailing and fluctuating environmental conditions, thus providing a selective advantage over alternative designs… The [MPP] provides a thermodynamic explanation for the ubiquitous process of hierarchical self-organization observed in all environmental and socioeconomic systems, including cities, farms, watersheds, and other ecosystems… [And as] a universal principle of system self-organization, selection for maximum power provided the basis for H.T. Odum's systems-based understanding of energy transformation dynamics, which ultimately resulted in his emergy-based methods of ecosystem and environmental policy analysis."[292]

H.T. Odum & Elisabeth Odum: *"As has already been stated, all forms of energy can be converted completely into heat, which is low-quality energy. Heat-energy equivalents, calories, can serve to measure all kinds of energy. In any system, inflowing calorie equivalents must equal outflowing calorie equivalents, including dispersed heat. Calories measure energy when it is downgraded to heat."[293]*

Maud & Cevolatti: *"[On the other hand,] emergy, to paraphrase H.T. Odum and E.C. Odum, is a tabulation of the energy of one type required directly and indirectly to make a service or product."[294]*

H.T. Odum & Elisabeth Odum: *"[This] measure of energy has to do with upgrading. It takes more energy of one kind to generate energy of another, higher-quality kind. Some forms of energy, like sunlight, are very dilute; others, like gasoline, dynamite, and high-voltage electricity, are very concentrated."[295]*

Maud & Cevolatti: *"Indeed, it was from tabulating emergy flows that H.T. Odum discovered what he called the 'maximum empower principle', which he proposes as a guideline for selecting policy: 'Choose alternatives that maximize empower intake and use'. H.T. Odum's proposal was that political decisions be based on considerations of their consequences for the flow of emergy (i.e., empower)."[296]*

We began this story with a consideration of our evolutionary path going back several hundred million years. Of particular interest to us were the development of eyes and brains and other biological information and communication technologies. The Metasystem Transition Theory is what we need in order to understand the evolution of control and its implications for a metarevolution. Note that "control" here is non-pejorative, and essentially a synonym for the effect of information and energy channels upon each other in a complex, hierarchical and symbolic universe.

Heylighen, Turchin & Joslyn: *"The Metasystem Transition Theory makes it possible to reconstruct the sequence of evolutionary events from the beginning of time to the present as a partially ordered series of metasystem transitions. These transitions can be roughly classified in four categories or 'tracks':*

1. *Prebiotic: the developments taking place before the origin of life, i.e. the emergence of physico-chemical complexity: the Big Bang, space and time, energy and particles, atoms and the different elements, molecules up to organic polymers, simple dissipative structures.*

2. *Biological: the origin of life and the further development of the specifically biological aspects of it: DNA, reproduction, autopoiesis, prokaryotes vs. eukaryotes, multicellularity, sexual reproduction, the species.*

3. *Cognitive: the origin of mind, i.e. the basic cybernetic, cognitive organization, going from simple reflexes to complex nervous systems, learning, and thought.*

4. *Social: the development of social systems and culture: communication, cooperation, moral systems, memes."*[297]

The present chapter in our story is nothing less than a new evolutionary leap forward—a metasystem transition which, like others before it, will transform the trajectory of life.

H.H. Pattee: *"All living organisms exist by virtue of hierarchies of control by informational constraints. This is the case at all levels, from the genes, to development, to sensorimotor controls, to abstract thinking, and to our technical artifacts."*[298]

Every pivotal point in evolution has been defined by the emergence of higher levels of information and control systems and self-organized complexity, and is teleologically connected to the demands of thermodynamics —which drives these systems to minimize free-energy.

Bobby Azarian: *"Dissipation-driven self-organization can look like magic, but it requires no supernatural force to proceed. It is thermodynamic in origin, Darwinian in nature, and mathematically describable… Since a stable state of non-equilibrium persistence requires continual free energy to be maintained, the attractor that the system evolves toward is configured for optimal energy absorption and dissipation. In other words, a natural pressure to minimize free energy and produce entropy spontaneously creates an ordered structure with an objective function. With the emergence of dissipative structures, we see the emergence of purpose in nature, and that cosmic purpose is associated with maximizing the rate of entropy production… In a nutshell, the second law favors the emergence and persistence of increasingly complex and functional energy-extraction machines, and when those machines become sufficiently complex, we call them organisms."[299]*

Through the ideas of complexity science, thermodynamics, and metasystem transitions, evolution can be seen through the following holarchy.

Valentin Turchin & Cliff Joslyn: *"Human intelligence, as distinct from the intelligence of non-human animals, results from a metasystem transition that allows the organism to control the formation of associations of mental representations, producing imagination, language, goal-setting, humor, arts and sciences… [There is a] sequence of metasystem transitions which led, starting from the appearance of organs of motion, to the appearance of human thought and human society:*

- *control of position = movement*
- *control of movement = irritability (simple reflex)*
- *control of irritability = (complex) reflex*
- *control of reflex = associating (conditional reflex)*
- *control of associating = human thinking*
- *control of human thinking = culture."[300]*

Complexity evolves because of the energy and entropy considerations discussed above—this is the "why". Complexity evolves through progressive,

self-organizing metasystem transitions—which is the "how". Together, they give us a good overall sense of the evolution of complexity.

Valentin Turchin & Cliff Joslyn: *"Consider a system S of any kind. Suppose that there is a way to make some number of copies from it, possibly with variations. Suppose that these systems are united into a new system S' which has the systems of the S type as its subsystems, and includes also an additional mechanism which controls the behavior and production of the S-subsystems. Then we call S' a metasystem with respect to S, and the creation of S' a metasystem transition. As a result of consecutive metasystem transitions a multilevel structure of control arises, which allows complicated forms of behavior."*[301]

If human thought is a subsystem, and culture the metasystem, then it can be theorized that human cultures are going through a metasystem transition, and becoming the subsystems of something even more complex. In this kind of structure, every system remains whole and yet joins a larger whole —a holarchy. The human being as an indivisible unity is himself a metasystem of indivisible unities. Metasystem transitions, in general, do not erase the wholeness of the individuals being integrated. Yet, such erasure or dehumanization is certainly possible. Therefore, this piece of our metacrisis presents us with a specific goal: To complete this metasystem transition in such a way that the higher level of control/organization empowers us instead of ruling over us. Valentin Turchin wrote extensively on the subject of totalitarianism as an undesirable kind of metasystem transition.

Valentin Turchin: *"From the viewpoint of evolutionary theory, totalitarianism is a malformation, a degeneration, since a lower level of organization is distorting and suppressing a higher one. A totalitarian society loses the capacity to develop normally, and becomes ossified. This is an impasse—indeed, a pitfall—on the road of evolution."*[302]

An analogy: Think of a word, and say it over and over again. After enough repetitions, the word seems to lose its meaning—a process called "semantic satiation". Normally, sentences are built up from words, and words from sounds—a linguistic holarchy. When we hear "ah" we know it corresponds to the category "Sounds", and the same for "apple" in the category "Words". But in these strange moments of semantic satiation, it's as

if the category of Words is taken over by the lower-level category of Sounds, such that the higher complexity of the former is shoehorned into the simplicity of the latter. Turchin further illustrates the progression of totalitarian society through this lens of the evolution of control.

Valentin Turchin: *"A person can be confined physically… This is deprivation of freedom on the lowest level. Or a person can be blinded, so that although in a formal sense he is free, he must entrust himself to a guide. This is deprivation of freedom at a higher level—that of information. Finally, all of a person's senses—and, consequently, his capacity to receive information about the outside world—may be left intact, but at the same time his consciousness may be transformed, or his will paralyzed… This is deprivation of freedom at the highest level—the kind that the inexperienced observer does not always notice… Totalitarianism passes through corresponding stages in its taking over society. It moves from the outside inward, invading ever-deeper strata of societal life and disfiguring ever-higher levels in the organization of living matter."[303]*

This could very well be our fate. The second half of this book attempts to confront this looming danger, and shows how the evolution of increasingly complex metasystems is not synonymous with diminishing freedom. Rather, through metasystem transitions, we can achieve far-greater freedom.

Valentin Turchin: *"The emergence of humanity has opened up a new era in the evolution of life… We can do what once only nature could do. Therefore, we bear responsibility for life on this planet—and perhaps in the universe."[304]*

Our present metacrisis is getting worse with each passing day, because we are trying to use rigid, slow, complicated, top-down solutions to manage complex systems. And we are challenged to resolve this problem-solving crisis so that we don't continually break what we are trying to fix. Metarevolutionaries see it as necessary to use self-organizing complex systems to interact with the world, because that is what the world is composed of at every scale. Later we will return to how we can move into this next stage of human society, and thus begin to confront the myriad crises which interact within our metacrisis. First, though, there is a special kind of complex system which needs our attention.

1.3

GAMES

"Culture, then, is essentially creative play. And the health of an individual depends on the capacity to engage in this process, wherein the deepest creative qualities of human life are expressed."[305]

- Brian Goodwin

We are now turning a corner and refocusing the discussion—from metacrisis to metarevolution. We began by inquiring into the nature of crises, and decided that taking on the view of a metacrisis illuminates affordances for political, revolutionary, and metarevolutionary action. As a complex system of crises, a metacrisis has certain hierarchical characteristics—such as how metaphysical first principles, natural laws, and thermodynamics are built into every crisis, and are therefore prior to (or hierarchically above) all of these. This prompted us to examine the ongoing crises which pertain to these domains, which can ultimately be reduced to Value and Action. In sum, the metarevolutionary mode is, firstly, directed at finding the deepest domain in which there is a crisis, and, only after this, affecting nonlinear changes at bifurcation points between life and death, otherwise known as crises.

This brings us to games, which are ephemeral arenas of action. They are complexes of rules, institutions, people, choices, Value, and meaning. A game is a specific kind of complex system in which human purpose is articulated through a distributed dialogue of decisions: We specify, explicitly or implicitly, our subjective values, moral aspirations, and worldviews in the microcosm of every game we play and every choice we make. There is little in this world, then, that is more important than play, because everything (and this does nothing to belittle our actuality) is an expression of our participation in games. The Good is the absolute first principle of everything possible and actual; Action is the demiurgic builder of the other Forms; and games are the vessels in which Action is endlessly transformed—culminating, we forever hope, in perfected Value.

Because of this, a crisis in the deepest regions of the relationship between Value and Action drew our attention: It is a metarevolutionary concern at the genesis-point of a practically endless fray of other crises. The deepest-possible place for revolutionary action is therefore within our meaning crisis, where the love story of Value and Action begins to unfold, for better or worse.

And a further discovery comes out of this focus on the deep waters of our metacrisis. With the Good in place as the absolute first principle of everything, along with an understanding of its absoluteness which is inclusive of relativeness (possibility inclusive of actuality; transcendence inclusive of

imminence), naturalistic teleology becomes unavoidable. In other words, a value-ontology is implicitly directional. Evolution, history, and even cosmogony are not descriptions of a blind or meaningless tumbling from one part of Flatland to another—though power-ontologies will always aim to convince you otherwise.

Every actual change is a change in the relationship of monads. And, as monads are embodied units of quality which enter into complexes, the evolutionary complexification of our plenum is always, in every sense, a spiritual matter—i.e. a process with a naturalistic moral *telos*. These considerations lead to another metarevolutionary *modus operandi*: Whenever possible, take action which increases the complexity-consciousness of action-centers. This mixes with value-ontology to create the axiom: Whenever possible, discover new ways to fall in love, more perfectly, with Value.

Centers of action who attentively love the Good come to resemble it. But other factors can enter the interaction of action-centers, and when this happens, the evolution of complexity becomes, instead of a process, a game, wherein the Good, as end-of-ends, is recollected by way of agents whose relative goods may or may not be in conflict with each other, or this final end.

Plotinus: *"Every soul is, and becomes, that which she contemplates."[306]*

Complexification leads to greater consciousness, and consciousness leads to agents with self-reflective perception and malleable, mimetic appetite, along with new possibilities for cooperation and competition. The study of complexity, at this stage, entwines itself with the study of games. With some discussion on this matter, we will be ready to turn a page and enter into a new chapter in the love story of Value and Action.

Games, given proper gravitas, unify everything we've discussed so far. For metarevolutionaries, game theory is the study of how the holons (monads, people, cities, etc.) of a complex system articulate and transform the rules, conditions, and perceptions of their games. It is a way to study the loving interplay of Value and Action. Play, in its full prestige, is the discovery of meaning, the perfection of value, and the co-creation of an increasingly beautiful and wise world.

Gregory of Nyssa: *"In our constant participation in the blessed nature of the Good, the graces that we receive at every point are indeed great, but the path that lays beyond our immediate grasp is infinite… Thus though the new grace we may obtain is greater than what we had before, it does not put a limit on our final goal; rather, for those who are rising in perfection, the limit of the good that is attained becomes the beginning of discovery of higher goods."[307]*

A game crisis, then, is the false supremacy of work over play. Work is when any center of action performs any energy transformation—producing ordered complexity and consciousness, along with entropy (degraded heat energy which can no longer do work).

Mikhail V. Volkenstein: *"Energy is called 'mistress of the world' because everything that happens in the world does so via changes of one form of energy into another… The other forms of energy—potential and kinetic, thermal and chemical, electrical and magnetic—are the direct sources of the work carried out in nature and technology. Work is done when one of these forms of energy is transformed into another... Entropy is called 'the shadow' of the mistress of the world because it can be used as a measure of the depreciation of energy, if we understand the value of energy to lie in its availability for transformation into useful work."[308]*

Play involves a complex evolving system of rules, behaviors, strategies, and contextually situated expressions of the absolute Good. A game crisis occurs when work is applied in the wrong direction, or when the co-creative process of play has stagnated. Games are ephemeral, contextual forums of interaction between holons, whose emergent properties may include both the progressive illumination and actualization of Value and meaning, or their annihilation. And if we lose touch with the spirit of serious play, as we currently have, the result is participation in absurd games which we both hate, and hate ourselves for playing. Our metacrisis, as such, is inflamed by the subordinate status of play to work, given the above understanding. And because we are discussing the general patterns of complexity which inform the behaviors of a metacrisis and imply things about a metarevolution, the present discussion restores play to its proper place.

Work, subservient to play, simply has no meaning without the context of an intelligible and meaningful game. Worse yet, if we actively despise the current game but remain unable to change it, our work is distorted even further, beyond meaningless, into that which feeds a suicidal self-destruction of soul. So, in what follows, we will explore the "game crisis" within our metacrisis.

Our game crisis includes a set of devastating problems of both structure and perception. In the first case, there are "discoverable" patterns, rules, or conditions of the game which nudge players towards certain actions more than others—such as competition over cooperation, lying over telling the truth, and so on. Or else we can observe that our actions, although seemingly harmless on a small scale, create a game-wide condition which is bad or even fatal for society or the planet as a whole. Metarevolution therefore entails actions which structurally change the games we play.

In the second case, the perceptual problems, two people are truly only playing the same game if they have the same understanding of it. A game is not merely objective, but involves our perception of it as part of the complete system. So people tend to play different games, even when there is a constant, shared structure between them. Without a shared reality of the games we play, we can't possibly hope to transform the world into a place which reflects the ongoing realization of the Good. Thus, we also have to examine the kinds of actions which make games more transparent and understandable, which are necessary for breaking the pervasive traps of our current games.

Consider the following story. In a famous scene of the film *"A Beautiful Mind"*, a young John Nash is at a bar with friends, a group of college-age men. A few women across the bar catch their attention, and the guys all seem particularly interested in the singular blonde of the group. One of John's friends posits that, in the spirit of economist Adam Smith, actions in their own self-interest also produce the best outcome for the group as a whole. They should all pursue their first choice.

It's in this moment that John has a revelation: *"Adam Smith was wrong."* With an agreement among the gentlemen to ignore their first choice, *"The Blonde"* as they call her, and instead try to meet the other women in the

group, a greater number of people end up with a good outcome. The group as a whole can achieve better results with cooperative action.

Imagine you are one of John's friends hearing that, even though you all clearly want that shiny blonde woman, not one of you should even attempt to talk to her. Even more bizarrely, he maligned the magnanimous Adam Smith. Who does John think he is? Perhaps you also wonder if it is necessary or wise to essentialize a woman as *"The Blonde"* only to further objectify her as some sort of economic "prize"? But you move past these gut reactions and consider John's idea, and lay out the possible outcomes in front of you: All of your friends, including John, will either (1) honor the agreement, in which case you could have a great advantage by defecting and being the only one going after The Blonde, or (2) break the agreement, in which case you may as well do the same since she was your first choice.

That means, despite John's suggestion that they could cooperate, and the truth behind the assertion that the outcome for the group would be best, each of his friends realize that no matter what the others choose to do, going for The Blonde is still the only "rational" choice. Today, we have named this the Nash Equilibrium: The state of play when no player can improve his personal outcome by switching strategies.

Francis Heylighen: *"A game is an interaction or exchange between two (or more) actors, where each actor attempts to optimize a certain variable by choosing his actions (or 'moves') towards the other actor in such a way that he could expect a maximum gain, depending on the other's response… Zero-sum games are games where the amount of 'winnable goods' (or resources in our terminology) is fixed. Whatever is gained by one actor, is therefore lost by the other actor: the sum of gained (positive) and lost (negative) is zero. This corresponds to a situation of pure competition."*[309]

Sadly, in the film, we don't get to see how it plays out. John is so excited by his breakthrough that he rushes home from the bar to do math. What we do know is that the option to defect would still have been both present and highly tempting after John ran off. Although, as we will see later, we can't necessarily assume this outcome.

This concept is also illustrated in the Prisoner's Dilemma, which is one of the many "formal" games studied by game theory. In this famous

dilemma, two people desire their own best outcome—in this case meaning the shortest prison sentence. Each prisoner individually has a shot at serving the least amount of time if they are the only one to defect. You can't coordinate with the other person, so the question is, do you stay silent, or do you defect against the other person? If you defect, and they don't, you will serve no time, but they will serve three years. If you both defect, both serve two years. And if both stay silent, both serve one year, as seen in the "payoff matrix" below.

The Prisoner's Dilemma	Prisoner 1 cooperates	Prisoner 1 defects
Prisoner 2 cooperates	P1 = 1 year P2 = 1 year	P1 = 0 years P2 = 3 years
Prisoner 2 defects	P1 = 3 years P2 = 0 years	P1 = 2 years P2 = 2 years

Our metacrisis contains a crisis of games in the same kind of sense as John Nash's conundrum at the bar or the formal Prisoner's Dilemma. It is a crisis which affects all other crises, because the conditions of a game at any moment create emergent attractor states which incentivize certain actions more than others. But the game of life is flexible and changeable: We are not prisoners. Metarevolution is oriented towards discovering, building, and playing new games when the old ones outlive themselves.

"Classical" game theory (and related decision theories and economic models) assumed that people like John Nash's friends must choose to defect rather than cooperate, but if every player reasons this way, the outcome is worse both individually and collectively. The key to navigating a field of potentially hazardous choices is comparing games as a whole, rather than considering a static payoff matrix within a single game. This is because we have the power to not just make choices within an unchanging game, but to

play the game of choosing which game we play, also known as "metagaming". And, overall, all games can be considered subsystems of a "hypergame": A game composed of all possible and actual games and supergames, where the first move (action) is to choose which game will be played. We will return to this in the second half of the book. What is important for now is knowing that players do not always perceive that they are engaged in the same game, and players are not perfectly or uniformly rational and will not always choose certain strategies even if math tells us they will.

In short, some of the games we play are like the Prisoner's Dilemma, while others have completely different purposes, rules, and equilibriums. All of them express our current and aspirational desires and sense of meaning. For example, the "prison sentence" isn't the only thing of value which is at stake in games like the Prisoner's Dilemma: Trust itself is an important human value which can either be strengthened or destroyed by our choices in games such as these. Therefore, the first choice we make is not an action within a game, but rather the choice between games themselves.

Often, the inner-workings of games are not so clear. It's hard enough to understand the world and ourselves, let alone to understand someone else's understanding. So people perceive (and therefore play) totally different games. This relates potently to our meaning crisis: If our "zombie apocalypse" is the collapse of worldviews and meaningfulness, then most people perceive the game we are playing as pointless, or else are fragmented into mutually conflicting understandings of a game whose only purpose is the accumulation of power. Conditions of desperation and hopelessness make individuals more likely to play the "defect" strategy, because it promises power and immediate riches today in a world where we feel disconnected from (and not even promised) tomorrow. We must take on the challenge of our metacrisis as a whole, and create a coherent vision of change which addresses things like meaning, wisdom, and imagination, as well as our relationship to the all-important games in which these are expressed.

The first step is to look at the game theoretic traps which cause us to "race to the bottom" in relation to what is most valuable and meaningful.

1.3.1

INCENTIVES & TRAPS

"Certainly, action is a decision, a choice. But it is also a wager. In this notion of wager, there is an awareness of risk and of uncertainty. Every strategy in any possible domain has this consciousness of the wager, and modern thought has understood that our most fundamental beliefs are the object of a wager… The domain of action is very risky, very uncertain. It imposes on us a very keen awareness of risks, derailments, bifurcations, and imposes a reflection on complexity itself."[310]

- Edgar Morin

A game is a complex system of players, rules, choices, attractor states, meaning, and more. We are always playing with Value and Action: Every action transforms us, our environment, or both. As the bearers of consciousness and freedom, we face a moral imperative to choose actions which establish our personhood and wholeness, proliferate love, and accord with the aspiration to live in devotion to the Good. A trap is that which invites us to betray ourselves. While a nihilistic conception of a trap would be based on utilitarian and positivist ideas, the optimistic version stresses the aforementioned self-betrayal—which follows from natural law and its demands on us.

Traps, generally, are those things which make it maddeningly difficult to do what is in our own best interest and/or the interest of the world as a whole. Often it is a devaluing (or discounting) of the future in favor of the present. A game theoretic trap, when you get to the planetary scale, is a depersonalizing, vortical attractor which grips us in servitude to the worst aspects of ourselves.

A key retrospective sign of a game theoretic trap is disharmony between the answers to "Did you want to do it?" and "Did you do it?" A "yes" followed by a "no" (or a "no" followed by a "yes") indicates that the choices we wish to make are being distorted by the conditions and incentives of a broken game. Additional self-imposed limitations are revealed by counterfactual questions such as "Would I be willing to play a different game if you were?" If there is a game we would both like to play, given the other's participation, then we must find a way to play that game instead. These forms of counterfactual consideration, such as one finds in self-probing questions like "What would I do if the other player takes a certain action?" play a central role in the study of games as well as our actual play within them.

Ruth M.J. Byrne: *"People spontaneously create counterfactual alternatives to reality when they think 'if only' or 'what if'."[311]*

Mandel, Hilton, & Catellani: *"Strictly speaking, counterfactuals refer to thoughts or statements that include at least some premises believed to be contrary to fact. According to this broad definition, counterfactuals do not require a temporal reference. For instance, one might say, 'If all circles were squares, then all spheres would be cubes.'"[312]*

Birke, Butter, & Köppe: *"[Using this pattern,] counterfactuals achieve a 'contrast effect', as they sharpen the awareness of an actual state or outcome through the mental juxtaposition with a possible one."[313]*

Ruth M.J. Byrne: *"[So they] explain the past and prepare for the future… They affect intentions and decisions."[314]*

Robert Jervis: *"[And we should recall that] a system exists when elements or units are interconnected so that the system has emergent properties—i.e., its characteristics and behavior cannot be inferred from the characteristics and behavior of the units taken individually—and when changes in one unit or the relationship between any two of them produce ramifying alterations in other units or relationships... On the one hand, this means that when we are dealing with a system, counterfactuals cannot be used in as simple and straightforward a way as our intuition leads us to expect. On the other hand, it means that counterfactual thinking can be extremely useful for thought experiments that assist us in developing our ideas about how elements are connected and how results can arise. Counterfactuals can alert us to the possible operation of dynamics and pathways that we would otherwise be prone to ignore."[315]*

This kind of reasoning, which is at the core of play, shows that incentives and traps can be highly perceptual in nature. Or, in other words, one might take a certain action if they expect all others to take similar actions. And, eventually, we can arrive at a Nash Equilibrium (where no player would willingly change strategies), that is far from the ideal outcome. Incentives and counterfactual traps are the fuel which propel us toward such consequences.

So traps, we see, can emerge from the structure and/or perception of a game. Many share similar general patterns—for example: A member of a group can secure the most value for himself by defecting against the rest of the group. But, in reality, when this behavior is mirrored throughout the group, everyone suffers more and is worse-off. This incentive, whether structural or perceptual, to defect against the group for personal gain is, picturesquely, a "race to the bottom". As in, a trap is a condition of games that incentivize us to "race" towards the worst-possible future. This pattern shares much with concepts which go by names like "social dilemma", "tragedy of the commons", "multipolar trap", and "free-rider problem". All of these, in

overlapping ways, demonstrate what we stated at the outset: When complexity-consciousness reaches human-level, actions leave a trace in a shared medium (a state-space of possible actions) which acts as a positive feedback loop and strengthens that action as an attractor state.

David De Cremer & Jeroen Stouten: *"A social dilemma represents a social situation in which personal and collective interests are at odds… One type of dilemma we are confronted with frequently…is the public good dilemma. Public goods (e.g., outcomes or benefits from a common team project) can be defined as goods that are available to all. That is, no individual can be excluded from consuming it once it is provided… An implication of the impossibility to exclude individuals from consumption is that the provision of public goods (e.g., the achievement of a common team project) is problematic. After all, if it is possible to consume the good even without contributing to its provision, individuals may reason that it is in their personal interest not to contribute (i.e., to free-ride). The risk then is that contributions will fall short, and the public good will not be provided."*[316]

There are instantly recognizable, real-world traps (or dilemmas) which follow this pattern, such as the nuclear arms race, or being unable to meet carbon-emission goals, or the extremely low voter-turnout of many democratic countries. In the case of an arms race of any kind, we can see clearly how having heaps and piles of bombs, enough to destroy the planet many times over, is not a good group-level outcome. Yet the individual players may seemingly have no choice but to keep building bombs, for fear of being on the wrong side of a myopic, win-lose game.

People often race to the bottom with other people, and whole groups (like businesses and countries) can be trapped in this dynamic with other groups. We can even be caught in this dynamic with our future-selves. Consider a copy of yourself representing you at one-year intervals in the future. If you all value your present fulfillment more than future fulfillment, then you will end up taking actions which harm the future versions of yourself. Even internally like this, our actions can be out of line with what we value because of how traps nudge us towards destructive behavior.

Some of the features of the games we play are so pervasive that a bit of anthropomorphizing can go a long way in exposing the archetypal patterns

—those patterns which consistently thwart our attempts at making a good society. Scott Alexander has done this by making Moloch the face of game theory's free-rider problem or "multipolar trap"—inspired by the poem *"Howl"* by Allen Ginsberg.

Allen Ginsburg: *"They broke their backs lifting Moloch to Heaven!"*[317]

Scott Alexander: *"The question everyone has after reading Ginsberg is: what is Moloch? My answer is: Moloch is exactly what the history books say he is. He is the god of child sacrifice, the fiery furnace into which you can toss your babies in exchange for victory in war. He always and everywhere offers the same deal: throw what you love most into the flames, and I can grant you power."*[318]

Moloch symbolizes the Dark Counterfactual: We can't be the only nation that doesn't please Moloch with child sacrifice, right? Won't we be doomed to perish in the war if we abstain from diabolarchy? Isn't it ethical to fuel this devil's engine, such that we might live long enough to create a good society? How can we pursue goodness if we're dead? These questions weigh heavily in our metacrisis: It does not take everyone applying this thinking to wreak substantial havoc on the world—in fact it takes very few. And a key requirement for metarevolution is creating a good society via other means than sacrifices to Moloch. That would be a failure to embody the better world we seek, not to mention a pathetically flimsy and Pyrrhic victory. This makes Moloch the perfect symbol of a loveless world—the face of Power's domination of Love.

Teilhard de Chardin: *"For all that 'society' may stifle us in its countless arms, it can still not reach us in the core of our beings or bring us closer together. Mankind, so extolled for the last two centuries, has been brought to a halt at the collective, which is now a terrifying Moloch. We can neither love it, nor love one another within it. That is why instead of fulfilling us, it mechanizes us."*[319]

A key factor in our metacrisis is this kind of game theoretic condition which habitually derails our incentives, goals, and actions. Likewise, a key metarevolutionary principle is to understand and transform our game

conditions before actually playing one or many real-world games of life-or-death importance.

The "race to the bottom", which Moloch symbolizes, is a place of human festering, and self-evidently not somewhere we wish to be. But as in the case of John Nash and his friends, each individual action in a race to the bottom can seem rational (or inescapable) from limited perspectives. This can be true even if you know about the free-rider problem (or the tragedy of the commons or similar concepts), and that win-lose games repeated over time become lose-lose because of their effect on the world around them. John's explanation was theoretically-sound, but probably not sufficient to change his friends' behavior.

Donella Meadows: *"[There are many examples of] people acting rationally in their short-term best interests and producing aggregate results that no one likes."[320]*

Emma Wheeler Wilcox: *"In which class are you? Are you easing the load*
Of overtaxed lifters, who toil down the road?
Or are you a leaner, who lets others share
Your portion of labor, and worry and care?"

Our choices are not isolated—they are part of a complex system of games and, in aggregate, contribute to shaping a field of affordances, attractor states, and states of equilibrium. But the Nash Equilibrium, in which nobody can individually do any better by switching to a new strategy, is not necessarily the ideal one, especially when you consider the Good as the telos of all gameplay. You can be trapped in an equilibrium of defection even when cooperation would be better for everyone, as with the prisoners in their famous dilemma. Game-wide states emerge from individual choices.

An attractor state, for good or ill, is like a whirlpool to a ship—it doesn't take much to get sucked in, but requires far greater effort to get out. It is like the hostile equilibrium between the Montagues and Capulets in *"Romeo and Juliet"*, wherein the slightest provocation poured fuel on the fire of their feud. And it was not until the shocking death of the two lovers that the families were thrust into a new, tentatively peaceful, attractor state and equilibrium.

Let's consider this in the context of our meaning crisis and metacrisis. Addressing either of these requires a great deal of attention, energy, and trust. If we are seeking some specific change, what is the actual mechanism of this change? It is one thing to be philosophically in favor of something, and quite another to actualize it. Game theory has much to teach metarevolutionaries, starting with the idea that every action or process is part of a larger strategy, and that every strategy is like an organism in life-or-death competition with other organisms. It is in that context that game theory offers its insights.

The ability of any strategy to survive depends on the presence and prevalence of all other strategies and the agents embodying them. We will return to this idea in more detail. But first let's consider the desire to address our meaning crisis through the lens of gameplay. Addressing it, or any crisis or metacrisis, will happen through the adoption of some strategy; the increased prevalence of one strategy changes the relative strength and survivability of other strategies; thus, embodying a strategy mutes or amplifies others, and gameplay evolves via interaction of strategies the way animal species evolve via interaction in the biosphere. The necessary conclusion of this is that metarevolutionary action is oriented towards evolutionary stability. Or, in other words, if your revolution was a person, would he survive long enough to accomplish his goal?

The final point to consider, in this regard, is that the presence of optimism can potentially catalyze nihilism; or, isomorphically, justice and moral action may interact with the state-space of strategies in such a way as to incentivize Machiavellianism. We shall see in the following section why we need strategies of conditional cooperation, rather than pure cooperation or pure competition, in order to embody action which is resilient or antifragile to the possibility of the kind of defection or traps which undermines the "playing field" of our games and leads towards self-extinction.

As a factor in our metacrisis, game theoretic conditions generate and exacerbate other crises, and pull crucial attention and energy away from where it is needed most. A Nash Equilibrium acts as an attractor state which exerts a constant pull on us to take certain actions rather than others. The second half of this book will continue to show how the structures, incentives, traps, equilibriums, and perceptions shape the way we play, and how we can redirect

these aspects of game theory from being a liability in our metacrisis into an asset for our metarevolution.

As a final consideration before moving on, we should note that certain other assumptions from game theory's early days must be modified to be coherent with modern complexity science and the other topics we've discussed. One crucial change is to update our understanding of "win-lose" or zero-sum games. Traditionally, this only described the players—but we know that games are played on a board, a field, or something tangible, not in a vacuum. Win-lose games on a finite planet become lose-lose-lose over time due to the accumulation of externalities, where the third entity is the environment or whatever you want to call the outer conditions of two or more players immersed in so-called win-lose games. Put another way, if our game is about "winning" in an individual sense, a view which is no doubt derived from the power-ontologies and rotten metaphysics at the core of our meaning crisis, we can only play it for a relatively short time before it destroys the common grounds needed for continued play.

Therefore, what we need, foremost, is to be playing an "infinite game", in which the primary goal is to continue playing (as opposed to the goal of winning any individual, finite game).[321, 322] This is where game-choice and game-perception are most clearly factors which can push us towards wildly different futures.

As a global society, the planet (and even the whole cosmos) is the playing field, and our current game is destroying it. This relates to John Nash's objection to Adam Smith's view of The Invisible Hand—the Midas Touch of which converts every type of value into gold bricks of a mausoleum. Therefore, in the metarevolutionary view, systems like markets need a metasystem to break these pervasive traps and finite game dynamics. Doing this will require love, trust, technology, and perhaps, above all, a common belief that we are able to change.

1.3.2

TITS & TATS, RABBITS & STAGS

"The quality of strength lined with tenderness is an unbeatable combination."[323]

- Maya Angelou

Decades after John Nash made his famed contributions to game theory, a competition was held to determine who was the greatest prisoner of them all. That is, if you have to play 1000 rounds of the Prisoner's Dilemma, and receive a final score (or "prison sentence"), what is the best strategy? Is it true that defection is the best way to play?

In the end, and in similar experiments since, a strategy called "tit-for-tat" consistently comes out on top. The algorithm is simple: cooperate on the first round of the game, and, after that, copy your opponent's last move (cooperate if they cooperate and defect if they defect). The algorithm is no pushover. If you play mean, it plays mean. If you play nice, it plays nice. It's a "conditional cooperator".

The beauty of this strategy is that it allows us to embody our best qualities and aspirations, while remaining vigilant to forces which seek to derail us. Namely, we see a sort of shape-shifting battle between the Good and Power, or optimism and nihilism, which takes many forms yet is always the same. Always, it is the temptation to secure personal value and power at the expense of universal value and love.

Another game, called "Stag Hunt", is deceptively close to the Prisoner's Dilemma, but reveals another important part of our game crisis. The game involves two hunters who must decide what kind of animal to pursue for dinner. Each of them can kill a rabbit on their own, but it's not much payoff for all the work. Or they can cooperatively hunt a stag—a better payoff for both hunters, but not something either one can accomplish alone.

They camouflage themselves near a path where deer are known to cross, and wait for their moment. But it's in that moment that a rabbit hops into view, and both hunters could be the first one to spear it, leaving the other hunter with nothing. And so the hunters, ironically, are caught in a trap—the incentive to defect. After all, there is no guarantee that a stag will walk by, but the rabbit is here now. But, unlike the Prisoner's Dilemma, where the Nash Equilibrium is defection, in the Stag Hunt there are actually two points of equilibrium which can become a Nash Equilibrium given the current state of play.

The key difference is in the payoff matrices of the games. In a classic Prisoner's Dilemma, the highest potential value is available to you when you

defect, but your opponent cooperates—one prisoner can potentially go free while the other serves a longer sentence. But when the two hunters are faced with the payoff matrix of the Stag Hunt game (also called an "assurance" game), the highest possible payoff comes from cooperation.

Stag Hunt	Hunter 1 goes for rabbit	Hunter 1 goes for stag
Hunter 2 goes for rabbit	H1 = Rabbit/ H2 = Rabbit	H1 = Rabbit/ H2 = Nothing
Hunter 2 goes for stag	H1 = Nothing/ H2 = Rabbit	H1 = ½ stag/ H2 = ½ stag

Robert H. Bates: *"The incentives captured in the assurance game can perhaps best be illustrated by the dilemma faced by revolutionaries. Were all simultaneously to join the revolution, then, arguably, the world would become a better place. But no one dares initiate the revolution, because by moving first, and therefore alone, the revolutionary may be left the sucker by those who reap the traitor's payoff. The traitors need not even be active traitors; merely by persevering in the old ways—that is, by choosing [defection]—they reap positive rewards when another seeks to alter prevailing practices."[324]*

The metacrisis we face contains crises of trust, coordination, cooperation, competition, and action in the world's most serious games. Once the self-organization of monads reaches human-level complexity and consciousness, the further actualization of the Good in ourselves and the world requires serious play—a reflective process of metagaming, or choosing which microcosmic game to play within the context of the macrocosmic game set in motion by Value and Action. The action of choosing an actual world among all possible worlds carries the moral demand to choose and enact the best one. We

simultaneously play and build our games: Our actions in life as a whole comprise what game theory calls a "strategy"—a blueprint for interaction based on if-this-then-that reasoning and counterfactual "what would I do if…" questions; or, in other words, free-energy minimization through prediction-action-perception cycles. Such a blueprint can take the form of one of the payoff matrices we encountered in various games so far, although it would look exceedingly more complicated than those, in reflection of the vastness and variety of life.

The sameness between "toy model" games and the real ones we play every day still remains the most important takeaway from this discussion, however. And in confronting our metacrisis, or any crisis within it, we must remember that every action is actually interaction, and not every strategy is viable when viewed from the holistic perspective. Metarevolutionary action is thus informed by game theoretic conditions in the same way metaphysics and complexity science have guided us so far. Action which ignores any of this is doomed before it begins.

The following section will continue this exploration of strategies and their evolutionary interaction. There are, for example, some fairly obvious actions and processes that organisms like humans include in their strategies in order to remain viable (also known as "living"). If a person does not include "eat and drink" in his strategy, the strategy is not viable from the individual perspective. It is also not "stable" from the evolutionary perspective. As in, if humans widely started copying this non-eating strategy, the species would not be embodying a viable strategy. The strategy would lack evolutionary stability.

Of course, real-world strategies are much more complicated than the example above. The theme we need to expand on here is what is called an "evolutionarily stable strategy" (ESS). This topic will shed light on how complex systems can get stuck in self-destructive patterns of behavior, but also how they make leaps of transformative self-overcoming.

1.3.3

EVOLUTIONARY STABILITY

"The establishment of stable cooperation can take a long time if it is based upon blind forces of evolution, or it can happen rather quickly if its operation can be appreciated by intelligent players."[325]

- Robert Axelrod

Just prior to this, we ventured out to the deep woods on our Stag Hunt. We might as well stay a little longer to contemplate what one might call the Nash Equilibrium of nature: the evolutionarily stable strategy (ESS).

The metarevolutionary approach to confronting a metacrisis involves considering how any plan of action (strategy) interacts with other available strategies. And, consequently, further revolutionary and political action is nested hierarchically within a decision to apply only those strategies which are evolutionarily stable. Applying unstable strategies results in short-term gains which are promptly undone as unethical strategies inevitably encroach. Let's dive a little deeper into this subject of evolutionary stability to see why it is so important for our metarevolution.

The iterated Prisoner's Dilemma tournament described in the previous section illuminated the possibility of strategies other than "always defect" or "always cooperate". Mixed strategies, like tit-for-tat, have an evolutionary stability that other strategies lack due to how all strategies are tangled up in each other's existences. In this section, we will explore the juxtaposition of two strategies which are both evolutionarily stable. One, we will see, is more "universally" stable in the sense that it leads to the greatest perfection of actual value.

The strategies we must give our attention to are "always defect" and "tit-for-tat"—both of which have already been illustrated through the Prisoner's Dilemma and the iterated version of that game, as well as the Stag Hunt or other "assurance" games. The "natural" form of gameplay is a little less concrete, but often takes the same general form. Robert Axelrod points to four attributes of these games:

1. Payoffs do not have to be of the same type or value

2. Payoffs do not have to be measured absolutely, only relatively to each other

3. No need to assume players are "rational", or even using a strategy consciously; things like instinct and intuition come into play

4. Cooperation may be seen as bad from the whole-world perspective, as with the case of businesses colluding for local gain, but with global externalities.[326]

On the first point, this means that we will need a game theory which can model highly-flexible, perceptually-modified games. Payoffs or relative goods do not exist so formally on a printout of a payoff matrix filed away at city hall. Yet you can construct a complex payoff matrix of sorts by making it representative of a player's predictions about the nature of the game being played, their predictions about the contextual value of various actions within that game, and their predictions about other players' predictions about these same things.

On the second point, it is clear that our theory of games should take into account interactions which are largely determined by players aiming at some relative good, rather than players contextualizing those goods within anything absolute. Although game theory can and should be applied to the "moral games" which are being played by humans and other centers of action, it is not strictly necessary to do in every case in which one wishes to gain insight into interaction.

Thirdly, "strategy" must be understood extremely generally. There is a tendency to equate this word with high-level, intelligent planning. It is more basic and universal than that. For example, there are "mating strategies" in the less conscious mammals which are driven by instinct more so than by human-like cognition. And in even simpler living systems, there are highly mechanistic survival strategies, like a plant shifting its leaves towards the sunlight, which have even less to do with highly complex conscious activity of humans. And then, on the human level, strategy is still a confused thing. We are certainly employing strategies at every moment, but it is often happening without us thinking "Today is a day for strategizing."

And lastly, cooperation and competition balance each other, and can keep each other far away from dogmatism. Businesses may collude and become functional monopolies, or else governments may go through totalitarian metasystem transitions which, through a pathological form of cooperation, squash all competition. This means that we will be seeking a dynamic union of cooperation and competition through "arenas" of action such as markets, strategies like tit-for-tat, and technologies which support both of these.

Later on, we will see that not only are real-world games fuzzy in the ways described above, we must include every player's perception of the game within the model for that game. Resulting from that, our perceptions and predictions about (and interactions with) other people are deeply embedded in our strategies.

In addition to this, Axelrod draws four conclusions from the tournament results where tit-for-tat was such a dominant strategy (renamed here for fun). We will use these principles of evolutionarily stable cooperation to help shape our participation in the games of the future:

1. The Ultimatum Principle (*"don't be envious"*): In the Ultimatum Game, two players are splitting a cash prize of $100. The first player decides how to "cut the pie" and the second player decides whether to accept the offer. If player 2 accepts, both players get the amount that player 1 suggested. But if player 2 rejects the offer, neither of them get anything. The classic "rational" economic choice is to accept any offer at all as player 2, because it will be more than the $0 you will otherwise get. And yet, experiments have shown that people tend to reject offers of less than $20, because of the perceived unfairness. They choose to punish the "mean" player even at their own expense. The Ultimatum Principle thus tells us to do the best we can, and not to let envy get in the way of our self-interest.

2. The Miyagi Principle (*"don't be the first to defect"*): Named for beloved sensei in the *"Karate Kid"* films, who taught his student, Daniel, that *"karate is for defense"*. In contrast with Cobra Kai's "strike first" strategy, the iterated Prisoner's Dilemma actually favors Mr. Miyagi's approach. Tit-for-tat always begins with cooperation, and only strikes back in defense.

3. The Sucker Principle (*"reciprocate both cooperation and defection"*): The tournament also revealed there is a limit to niceness. A strategy of "always cooperate" performs much worse than tit-for-tat. Reciprocity must be applied to both cooperation and defection to avoid being taken advantage of.

4. The Clarity Principle (*"don't be too clever"*): Tit-for-tat happened to be the simplest strategy in the tournament. In real life, there is an important reason why. If people are attempting to practice this kind of conditional cooperation, it partly depends on being able to figure out the other person's

strategy. After a few rounds of play, tit-for-tat is easily identified and understood. This clarity is powerful, because as soon as two cooperators meet up, the pattern is likely to hold.[327]

Taking all that together, Axelrod asserts that the evolution of cooperation rests on three parameters:

1. Robustness - What kind of strategy can thrive in an environment with a wide variety of other strategies?

2. Stability - Under what conditions can an established strategy resist invasion by other strategies?

3. Initial viability - Can it gain a foothold in an environment that is primarily noncooperative?[328]

We are tragically stuck in what Eliezer Yudkowsky calls an inadequate equilibrium, which results from strategies which have enough stability to act as attractor states for players, but lead to suboptimal outcomes (even from the perspective of those very same players).[329] In our current world, we see a systemic pattern of behavior which has emerged from individuals who are mostly playing the "defect" strategy in a grand trap of our own design. Every person who plays this way makes And in fact, as Axelrod notes, the "always defect" strategy is the only evolutionarily stable strategy for all conditions, but is also an inferior equilibrium compared to the one produced by mutual cooperation. This aligns with the takeaway of the Nash Equilibrium in the Prisoner's Dilemma: Cooperation is possible, desirable, but often just out of reach. But rather than giving into Moloch, let's explore a plausible path towards a better future. Axelrod gives us the following heuristics for conditions which are best suited for the evolution of cooperation:

1. Kinship/Social structure - Order, community, labels, reputation, regulation, and territoriality all contribute to the evolution and stability of cooperative strategies.

2. Clustering - An initially small cluster of conditional cooperators can cause a disproportionately large change in the overall game state. It takes approximately 5% of a population to trigger this kind of systemic change. Another way of saying this is that if those following a tit-for-tat strategy have at least a 5% chance of interacting with other conditional cooperators, then tit-for-tat can take over an "always-defect" equilibrium.

3. Future relevance - Future value almost always tends to be of a lower subjective value than present value to those within a game—a concept called the "discount parameter". Many factors can contribute to this value-preference. For example, a person with children might feel more connected to future value due to how parenthood extends one's sense of self to one's child. In general, making the future more important in the consideration of present actions offsets the discount parameter and promotes cooperation.

4. Teaching - Human gameplay is highly flexible, and we are not bound by predetermined rules like the two players in the Prisoner's Dilemma. We can teach the values, facts, and skills that promote cooperation. For example, a second tournament took place, much like the first. But the players were told about the results of the previous tournament and given a detailed analysis of why strategies did or did not do well. Prosocial behavior can and should be encouraged through the collective pooling of such insights.[330]

What becomes clear from these points is that our systems are designed to the wrong specifications, unless your name is Moloch, in which case everything is running like clockwork. Defection is the dominant strategy, and we have not developed a user-friendly clustering mechanism that would allow cooperation to bootstrap itself. Our increasingly digital lives spotlights these shortcomings. Some areas of the internet have things like labels and reputation scores, but they are not permanent enough to provide the necessary social structure that allows cooperation to emerge. While technology like the internet connects us, we will see in the second half of this book that it needs to be paired with other systems—especially "trust technologies".

Finally, Axelrod finds four game-changers which may be applied to a Prisoner's Dilemma or any number of games. Not all will be applicable at all times, but are worth thinking about before we move on.

1. Enforceable threats - Essentially, change the payoff matrix from the outside—usually by building a high cost into defection. For example, a crime might be punished by banishment from one's community. This can mean being physically exiled, socially ostracized, or digitally banned. In absence of such a threat, players are more likely to use selfish and self-destructive strategies.

2. Coordination - The classic setup of the game requires that the players can't communicate. If there is a practical way to not just communicate about the decision, but to trust the coordinated action, then there is no more dilemma. If a player can play a conditional move like "copy the other player's move", then the two can set cooperation in motion. "Knowing" what the other player will do can also be achieved in a looser sense through reputation, so you feel you have a reasonable expectation of what the other will do.

3. Kill the other player or run away - There may be times when playing the game the traditional way is not necessary. Or it may be that you can "run away" and play a totally new game. Violence is not encouraged, but Axelrod correctly notes that a game is partially defined by its players and that one way to change that game is to eliminate other players. These are areas left untouched by classical game theory, but well-within the scope of gameplay in the metamodern era.

4. Change the payoff values - A small change in a payoff matrix can lead to sharp changes in the dynamic balance of possible strategies. Changing games in this way is a great example of what is sometimes called "mechanism design" or "reverse game theory"—something we will explore later on.[331]

From these options, it seems that a reasonable way out of our race to the bottom may involve better coordination and/or changes to payoff matrices. We will return to this later, because we have exactly the tools we need to change our games in these ways. And we will combine that with complementary technology which relates to the heuristics of evolutionarily stable cooperation—such as kinship and strategy clustering. We can and will bootstrap cooperation—even in a world where trust is an endangered species.

Our game crisis is an imbalance of competition and cooperation. Both are needed, and overcoming this crisis requires us to mediate their delicate balance. This means being oriented towards breaking the pervasive traps of game theory, nurturing conditions which are both individually incentive compatible and good for the world as a whole, and supporting the evolution of conditional cooperation. This becomes a major point of focus in the second half of this book, because coordination (which includes both competition and cooperation) and trust are foundational to existence, and no meaningful progress can be made without attention to our most important games. With this

in mind, we may conclude our look into our metacrisis, and consider a plan of action which is appropriately metarevolutionary.

2

METAREVOLUTION

"'Beyond' was a kind of war-cry for him."[332]

- Charles Nicholl

A metarevolution is a nonlinear change—often a phase shift or metasystem transition—in the underlying conditions which constitute the foundations of all nonlinear change. It is a complex system whose holons are revolutions. It addresses the base layers of all crises, and it is revolution applied to the base layers of revolutions. A metarevolution leads in the direction of greater complexity and consciousness of, and coherence between, action-centers. It is a state of orientation towards a metacrisis as a unity, and a striving to address the deepest crises within it—in a way which does not simultaneously lead the metasystem as a whole into worse crises. Let us use what we discussed about our metacrisis in the first half of this book to propel us towards metarevolutionary action.

The aim of the first half of this book was to demonstrate that a metacrisis is distinct from any individual crisis which is a holon of that complex system. And, in many ways, a metarevolution is a mirror image of what we've just explored. Where, for example, the interactions of crises within a metacrisis leads to an increase in problem-complexity, the interaction of revolutionaries within a metarevolution leads to an increase in action-complexity.

When disparate problems coalesce into the complex system of a metacrisis, the decisive moment of choice implied by the word "crisis" necessarily involves actions which make the problem-solvers even more complex and conscious, and their interactions more coherent and more loving.

A metacrisis is best understood by its interconnections and the emergent properties which it exhibits as a metasystem of crises. And we have explored this concept as a whole by way of our meaning crisis, which we see as the prototypical crisis-which-drives-crises. This is because every complex system has points of "leverage"—meaning that small changes can produce huge effects. And, likewise, actions which resolve a certain (deeper) crisis within a metacrisis may have a larger effect on this whole system than the resolution of other (more shallow) crises.

This half of the book is about actions which change the underlying conditions of Action. As in the first half of the book, we will use a specific crisis to illustrate broad principles—except now from the perspective of actions rather than crises. Specifically, we will be talking about a way out of

our meaning crisis. But, in the process, we will uncover modes of action which operate at a higher complexity, and thus are generally more suitable for confronting the challenges of any metacrisis. In other words, we will uncover a path towards the metarevolutionary transformation of Action itself.

The plan for this half of the book is as follows: We are continuing our journey through our metacrisis, beyond our meaning crisis, and into new territory as metarevolutionaries. Having come this far, it should be clear that our meaning crisis is illustrative of everything we wish to accomplish as metarevolutionaries. We understand that it is one of many crises within a complex system called a metacrisis; it is a deep (and perhaps the deepest) crisis, because it relates to actualization of the metaphysical first principle of everything, which is the Good; it is believed that the deeper the crisis, the more profound the implications of its resolution for the system of crises within which it exists; and, finally, the resolution of this crisis, like many others left to the reader's imagination, requires action which is more complex than the crisis itself, which creates the metarevolutionary impulse to build upon basic and universal conditions of action such as those indicated by thermodynamics and Information Theory. Thus, to resolve our meaning crisis, we must, so to speak, take the long road. This is not a job for one person; this is a job for a center-of-centers, a complex system of revolutionaries.

In this half of the book, we are shifting the focus from crises to actions. We will engage with topics relating to increasing the complexity, consciousness, and coherence of action-centers. This involves: thinking, imagining, sensing, communicating, predicting, and acting on the planetary level. In other words, if an individual is capable of solving a personal psychological crisis, it is a complex system of individuals which is best suited for taking on a planetary metacrisis. In making this motion, from person to planet, our intention is to preserve "I" and "We" simultaneously—to form a new whole while retaining our individual wholeness. It will become more clear that there are right and wrong ways to do this. Some modes of action (and the philosophies behind them) pathologically privilege the individual, and some do the same for the collective. So, in the following sections, when we speak of something like collective intelligence, we are seeking something which brings us to together while holding us apart, such as with a "metamind"

which does not turn the minds within it into a dehumanized mass of particles, but is truly a mind-of-minds.

To make this more salient, and to foreshadow the coming discussion, part of what must change is how we see all centers of action in relation to each other. We have started to call the most fundamental, basic entities monads. These truly basic units enter into complexes or holons. Each holon, importantly, is an indivisible whole—even as it is itself a complex system of indivisible wholes. Indivisible means that once holons self-organize into a new unity, the new higher-order holon embodies unique emergent properties which will disappear if it is divided or reductively analyzed at the level of its sub-holons.

As we carry the discussion forward, we need to consider the extremely different perspectives of all centers of action, and what actions are most moral from all of these perspectives at once. To do that, we need the concepts of monads and holons and souls, which form the foundation of a worldview which takes all perspectives at once (and sees how each of these are whole and indivisible).

As such, we will need to switch between perspectives as different as humans and planets and pigeons, and see them all as individuals in regard to the larger systems they interact with, and communities in regard to the smaller systems they unify. At vastly different scales of existence, we find there are monads and souls which have perceptions and appetites, are caused by the Good, and carry the principle of Action in varying degrees of perfection.

This will carry us quite far into our metarevolutionary agenda. Yet, if our intention is to form a center-of-centers which preserves and values every action-center within it, we must eventually return to the level of individual people. A metasystem, or center-of-centers, will take on quantities and qualities relating to each system or center within it. Thus, we will need a theory of transformation—that process in which Value and Action mingle and give life to new embodiments of meaning. This is where we will return to the domain of symbols and myths to which we alluded in the first half of this book. We will find that there is a metamythological expression of the dueling orientations—optimism and nihilism—wherein we continually open the door to Value, and continually close the door to Power.

Combining these preceding ideas—our metaphysical optimism, our new modes of action, and our theory of transformation—we will finally arrive not just at a resolution of our meaning crisis, but metarevolutionary principles which will permanently change our relationship to any metacrisis.

So, for all the pressing crises we face (at the time of writing, but likely in all times), most will remain unresolved when this book is over. What is carried forward, instead, are changes in how we change things and new ways of transforming ourselves as centers of action. This will make the possibility of the Good more probable in actuality. It will bring us closer to the best world imaginable.

2.1

CENTERS OF ACTION

"Every time you make a choice you are turning the central part of you, the part of you that chooses, into something a little different from what it was before. And taking your life as a whole, with all your innumerable choices, all your life long you are slowly turning this central thing either into a heavenly creature or into a hellish creature: either into a creature that is in harmony with God, and with other creatures, and with itself, or else into one that is in a state of war and hatred with God, and with its fellow-creatures, and with itself. To be the one kind of creature is heaven: that is, it is joy and peace and knowledge and power. To be the other means madness, horror, idiocy, rage, impotence, and eternal loneliness. Each of us at each moment is progressing to the one state or the other."[333]

- C.S. Lewis

Our first task is to see complexity from the other side of the crisis-action equation. In the first half, we explored the basic units and general features of complex systems—putting them in the context of our metacrisis. Compared to any given crisis, a complex system of crises takes on unique synergies and emergent properties. The interaction between crises generates new crises and fuels existing ones. The same principles of complexity, however, can be used to our advantage. When action-centers are less complex than the crises they face, the crises will tend to get worse. So-called "problem solving" will be nothing more than moving around the proverbial chairs of a sinking ship. This is why metarevolutionaries are oriented towards increasing the complexity, consciousness, and coherence of centers of action. This means, for example, "scaling up" our channel capacity in the domain of information, but also finding new ways to engage as a center-of-centers in the domains of intelligence, imagination, love, and all that is exemplary of our humanity.

In this section we will take on ideas such as thinking, sensing, and predicting—things that we all do as individuals. The question going forward is how to perform these tasks not as action-centers, but as a center-of-centers. One might imagine a "planetary person" to get a sense of what we mean. This is where our metarevolutionary journey begins.

2.1.1

A HYPERORGANISM'S

MANIFESTO

"Reality is that which, when you stop believing in it, doesn't go away."[334]

- Philip K. Dick

Since the early days of humanity, the similarity between an organism and the metasystem of organisms called "society" has been an inescapable observation. The center of human centers is animated in a way that makes it uncannily like a person, itself. The present discussion is all about harnessing the synergies and emergent properties of this individual-made-of-individuals, while simultaneously treating each of these individuals as ends-in-themselves. Thus, we will look over some of the history of this idea, and get a sense of "doing it right" and "doing it wrong". The good varieties of this idea involve seeing wholeness and autonomy in a nested system-of-systems; the bad varieties tend to either predicate themselves on nihilistic metaphysics or in some important sense become tyrannical by annihilating the individuality of the systems which form it. We will look at examples of both of these.

There are a number of ways to describe this individual who is somehow composed of whole individuals. The simplest is probably "society" or "civilization" or "humanity", but there are some crucial reasons for introducing some other terms. We do not want to: (1) essentialize human life (or souls) over the planet (or world soul); or (2) essentialize either the human individual or the planetary collective, but rather find something descriptive of a life's wholeness-within-wholeness. An important first example of the good variety of this idea comes from Plato.

Herbert Spencer: *"The central idea of Plato's model Republic is the correspondence between the parts of a society and the faculties of the human mind."*[335]

Alexandre Koyré: *"The city, indeed, is not a collection of individuals, but forms a real unity, a spiritual organism, and by that fact there is established an analogy between its constitution and structure and that of man. The analogy makes of the former a real macranthropos and of the latter a veritable micropolis."*[336]

Herbert Spencer: *"The ruler, the warrior, and the craftsman…[are] the analogues of our reflective, volitional, and emotional powers."*[337]

Alexandre Koyré: *"The psychological structure of the individual and the social structure of the city fit together perfectly, or, in modern terms, social psychology and individual psychology are mutually interdependent."*[338]

Heinrich A. Rommen: *"[So we may] call the state a moral organism to signify the teleological predisposition to it in man's nature… The word 'organism' is not merely allegorical. It represents, indeed, an objective fact and rests on the knowledge that the organism in the organic world and the moral organism in social life are both built according to analogous metaphysical principles of order."[339]*

Plato: *"Thus, then, in accordance with the likely account, we must declare that this Cosmos has verily come into existence as a Living Creature endowed with soul and reason…[and] containing within itself all the living creatures which are by nature akin to itself."[340]*

In other words, the best way to construct an individual-of-individuals is by treating everyone as worthy of love. An atom, a human, a city, and a planet are all holons. On one hand, we occupy just the human level of this holarchy. On the other hand, we occupy all these levels and more, all at once. Once human-level complexity and consciousness appear, the moral duty attached to it comes into awareness. We are capable of understanding that Value and Action are present in every holon, and that actuality is always the unfolding of moral development towards greater or lesser perfection. This applies to us as human individuals, and it applies to the individual-made-of-individuals. From the human perspective, this means that we have a moral duty to form a center-of-centers which preserves wholeness at every level of reality, and neither mechanizes people or objectifies the planet. The moral duty of actualizing the Good shares the same thermodynamic basis as organization in general.

Bobby Azarian: *"Why do interacting agents consistently link up to form stable wholes? For the exact same reason that molecules with the right chemical diversity will form stable autocatalytic reaction sets when pushed by a flow of energy: Working collectively allows the whole system to extract more free energy with less work. This is the essence of the principle of recursive self-organization. Nature promotes cooperation, collaboration, and synergy because it is thermodynamically beneficial for all parties, and for that reason, synergistic collective configurations will eventually be discovered by any many-component system that is exploring various states or configurations through the blind-variation-and-selective-retention mechanism. Organisms*

only compete until they finally figure out that working together makes everyone's task easier, and that goes for humans too."[341]

Thus, there are both metaphysical and thermodynamic causal factors which drive the ongoing expansion of complex organization. The idea is to integrate optimistic metaphysics and complexity science into some metasystem transition leading to a new center-of-centers—to make these ideas part of its "constitution", or, better yet, its manifesto. This is to say that when pushed to give an answer on what animates our individual-of-individuals, the good variety of this idea leads us to say: the perfection of Value and Action.

To contrast, let's consider another notable landmark in the history of this "social being" or person-made-of-persons: "Leviathan", published by Thomas Hobbes in 1651. Unlike the model in Plato's Republic, the Leviathan variety of this worldview has some important flaws which make it a worse model for our future.

Thomas Hobbes: *"That great LEVIATHAN called a COMMON-WEALTH, or STATE…which is but an Artificial Man; though of greater stature and strength than the Natural, for whose protection and defense it was intended; and in which, the Sovereignty is an Artificial Soul, as giving life and motion to the whole body."*[342]

The Leviathan of Hobbes's time was the nation-state, because the world had not yet reached the global interconnectedness we know today; just as in Plato's time the focus was more on city-states. Getting past these surface-level differences, we do find similarities between the conceptions of human metasystems in Plato and Hobbes. However, Hobbes's theory is also an exemplary marriage of social contract theory and nihilism—i.e. it builds its individual-of-individual on a faulty foundation. By asserting that humans are fundamentally evil and lawless, the Leviathan is a monument built atop an ontology of power. It is a denial of natural law, and allows power to have the supreme position in the metaphysical order. It is, in short, the wrong way to build a center-of-centers.

Heinrich A. Rommen: *"Hobbes thought that man is intrinsically evil, that he is driven by the reckless pursuit of selfish interests and passions uncontrolled by reason, that he is a lawless being. The natural status, therefore, is the bellum omnium contra omnes; men are by nature like wild*

beasts. Somewhat in contradiction to this thesis, Hobbes says that man nevertheless recognized that this status of permanent fear of violent death was very unsatisfactory and that for it should be substituted a contractual order of law. But because the evil nature of man is not reformed by the law, it is not enough that this social contract is made. There must be a transfer of all individual rights to the sovereign political power, a concentration of might which will forcibly uphold order and peace among men... The state's power must be unlimited because man is selfish, reckless, and evil. Out of the surrendered liberty arises, then, the omnipotent Leviathan. There is only one will, the will of the state. There is only one power, the supreme power. Outside of this there is no right: not that of the Church as an independent society, not that of the autonomous groups such as feudalism or the medieval guilds had built. There is nothing but the Leviathan, and there must be nothing more, or else the forces of evil passions, the ruthless selfishness of man, would destroy this toilsomely established order. Thus [for Hobbes] the fundamentally evil nature of man is the origin of the state and its lasting justification."[343]

So the Leviathan is a complex system which includes humans and seems, itself, to be alive —"willful"—in its self-assertive orientation towards its own survival. It is also constructed on a foundation of nihilism, not to mention an anesthetizing bleakness. It is based on a violent, power-centric metaphysics and a dark view of humanity. This is certainly the wrong direction for our future, and no Leviathan will relieve us from our meaning crisis or metacrisis. It absolutizes the collective over the individual; it replaces Value with Power as its first principle; and it attributes incurable violence and antimorality to the individuals composing it as a center-of-centers.

Moving forward, let's make sure that we do not fall into this trap. Instead, we need to capture the "living" quality of this planet-spanning network of complex systems of all scales; we need a term which reflects wholeness-within-wholeness. For this reason, the term "superorganism", an organism made of organisms, comes closer than others to describing the reality of our world. A cell is to an organism what an organism is to a superorganism. And, in a complementary sense which recalls the thinking of Plato and other philosophers, both organisms like humans and their dynamic unities (such as cities) can be considered organisms or superorganism

depending on one's perspective—and are ultimately both at once. Certain descriptions of our own bodies, like the one below, remind us of this reality.

      Ben L. Callif: *"While our bodies may seem like one continuous unit, every human body is actually a cooperative collection of more than 40 trillion 'human' cells and an equal number of bacteria. If you include other human microbial symbionts, it is estimated that you are composed of 10-times as many non-human cells as you are human—that's a quadrillion other organisms living in or on your body. It turns out that human bodies are more like ant colonies or cities than discrete lumps of me-ness or you-ness."*[344]

      But let's take it a step further. A "global metasystem" would be an accurate but dispassionate moniker for something so full of life. We can, and will, still have a need to refer to holons and monads, and could simply refer to a holarchy or superorganism or complex made of these individuals. Yet that isn't quite sufficient on its own, because there are actually innumerable superorganisms at different scales, and composed of different organisms—the classic examples being ant and bee societies, which are extremely unified and therefore easily identifiable as something which, as a whole, acts like an organism. Human society can also be termed a superorganism—and so can cities or nations or other large social groupings. The word we are looking for, then, is "hyperorganism": a metasystem with a state-space of all possible and actual superorganisms. A hyperorganism is composed of current, actual organisms and superorganisms (which tend to form a hierarchy with each other), as well as the state-space representing all organisms and superorganisms which exist in possibility. As with the Good, it is a union of the absolute and relative.

      In this way, we begin to include and transcend the distinctions between Man and Nature, between part and whole, between individual and community. We are not just a global superorganism composed of humans; we are part of a hyperorganism which includes all of Earth, and even beyond. There are many ways we can begin to shift worldviews in this direction, from awareness of our own status as both "individual" and "community", to seeking greater justice for Earth as an individual in its own right.

      These views overlap with what has been called "Gaia theory". This sits somewhere in between the previous theories from Plato and Hobbes.

James E. Lovelock & Lynn Margulis: *"The total ensemble of living organisms which constitute the biosphere can act as a single entity to regulate chemical composition, surface pH and possibly also climate. The notion of the biosphere as an active adaptive control system able to maintain the Earth in homeostasis we are calling the 'Gaia' hypothesis… Hence forward the word 'Gaia' will be used to describe the biosphere and all of those parts of the Earth with which it actively interacts to form the hypothetical new entity with properties that could not be predicted from the sum of its parts."[345]*

This theory is steeped in the materialistic-reductionist worldview, yet reaches a holistic conclusion. It is not as nihilistic as Hobbes, but it could be argued that its "animating principle" is a sort of empty bio-chemical equation. Neither God or Good are particularly present in this theory, and their absence lends itself to a situation where Gaia herself takes on a divine quality. We certainly are connected in an intimate way, and this theory captures some of that, but it also leaves out Value as an animating principle which could inform the moral *telos* of Gaia; and, arguably, commits the error of privileging one scale of existence over another instead of seeing them both as harmonious complexes of monads.

Having explored these three cases, we can move forward with confidence that the old story of an Earth-spanning organism is proving, each day, that it is not content to remain as ink on pages. It is as real as we are, and the extent to which this hyperorganism affects our individual lives will only grow in upcoming years. But will this center-of-centers form in a way which bears the marks of optimism or nihilism? This is not a story we may passively read, but must actively write. Our metarevolution seeks to fill this niche for one simple reason: The reality of our hyperorganism is inevitable, but its goodness is not.

Done correctly, this means establishing a hyperorganism which can, in an evolutionary sense, resist "invasion" by ruthless, amoral superorganisms. In other terms, which we will develop in depth later on, a hyperorganism must embody a game-theoretic strategy that is evolutionarily stable in relation to the field of possible strategies. As metarevolutionaries we must be oriented towards establishing a hyperorganism that acts as an anti-tyrannical mechanism. We seek that which fills a niche (takes up space) in order to

prevent an unethical, totalitarian superorganism from effortlessly expanding its influence in a vacuum of power.

Jordan Peterson: *"The forces of tyranny inexorably expand to fill the space made available for their existence."*[346]

Being anti-tyrannical is not just about being powerful—then one becomes the tyranny one sought to prevent. Any kind of order requires means to uphold it, yes, but to fully develop the idea of a healthy relationship between beings as different as a human and a hyperorganism will require an optimistic metaphysics and theories relating to its instantiation. A metarevolutionary person, as such, has a story of selfhood that includes both "I" and "We", and does not fanatically preference either. And the future we seek reflects this deep commitment to the dynamic balance of organism and hyperorganism. Some of the following sections deal with value, meaning, and transformation from a human point of view. And at other times, the focus is on the hyperorganism—giving attention to technology, processes, and implications for important subsystems like governments, which will be forever changed through this metasystem transition.

2.1.2

COGNITION

"The truth is that human society and culture are a vast meta-mind with greater computational power, insight and complexity than any individual human mind."[347]

- Ben Goertzel

The first system to consider, forming part of the hyperorganism we are discussing, is what has been called a "global brain" or "noosphere". We are considering the processes of cognition or "thinking" at the planetary level. A society of minds has synergistic and emergent properties not available to an individual mind. And to solve any of the major crises of our present metacrisis, we need to learn how to participate in, and benefit from, collective intelligence.

Francis Heylighen: *"Previously, processes like memorizing, remembering, and thinking largely happened inside an individual's brain, supported at most by external documents or verbal communications. Nowadays, the Internet allows individuals, external memories and computer programs to interact so intimately that they are starting to behave like a single cognitive system at the planetary scale—a 'Global Brain'. This leads us to envisage a distributed intelligence that surpasses human intelligence as radically as human intelligence surpasses animal intelligence."*[348]

Thomas Malone: *"Pierre Teilhard de Chardin, the renegade Catholic paleontologist and philosopher, called it the noosphere. He used this term, analogous to the word biosphere, to mean the global web of minds all over the planet, and he viewed the emergence of this 'mind sphere' as the end point of evolution on Earth."*[349]

So part of what we must engage in as metarevolutionaries is a conscious effort to increase the coherence between centers of consciousness; we must know that a "global brain" can be intelligent, without necessarily being compassionate, wise, or oriented towards good goals; and so our metarevolution needs to include the kind of collective intelligence which preserves and even strengthens the individuals which compose it, while affording those individuals an avenue for meaningful self-transcendence through participation in a mind-of-minds. Teilhard even conceived a future in which this trend would carry on beyond Earth.

Teilhard de Chardin: *"In just what form are we to picture this spirit of the Earth? This thing which is coming to birth in us and from us, through an ascent into the super-complex—is it some sort of super-family, super-team, super-culture, or super-nation, in which no element, however high its position in the hierarchy, will experience or synthesize in itself the totality of the*

whole? Or is it rather, as has already happened once in nature, some super-individual that is going to appear at the term of our coming together? When the collective is taken to its upper limit, is it still 'collective' or does it issue in a super-person? Is it a multi-centred or a uni-centred organism?… Towards what are we moving?… Beyond the spirit of the Earth, something greater, more complex and more fully centered than mankind is looming up before us. But what? In our search for the ultra-terrestrial sequel to the process in which we are involved, we might start by conceiving that psychological relations will one day come to be formed between our planet and other 'thinking' stars: the combined minds of a large number of earths. Among these major units the cosmic synthesis would then get off to a fresh start, carried to a new order of duration and magnitude."[350]

Bobby Azarian: *"In other words, a great cosmic mind at the end of time, so computationally powerful and so capable of generating new realities and experiences that it is functionally indistinguishable from the notion of a god. It would be the most powerful god conceivable. An ultimate Omega Point, to use Teilhard de Chardin's term for a system that has reached the goal state of maximal complexity."[351]*

To appreciate the seismic shift which we are currently undergoing, it would help to consider a brief history of collective intelligence—the evolutionary, self-organizing patterns of increasingly-global brains. When did collective intelligence first appear? How has it evolved since then?

Howard Bloom: *"The microbial global brain—gifted with long-range transport, data trading, genetic variants from which to pluck fresh secrets, and the ability to reinvent genomes—began its operations some 91 trillion bacterial generations before the birth of the Internet… Modern research hints that primordial communities of bacteria were elaborately interwoven by communication links. Their signaling devices would have been many: chemical outpourings with which one group transmitted its findings to all in its vicinity; fragments of genetic material drifting from one end to the other of the community. And a variety of other devices for long-distance data broadcasting. These turned a colony into a collective processor for sensing danger, for feeling out the environment, and for undergoing—if necessary—radical adaptations to survive and prosper."[352]*

Valentin Turchin: *"[Likewise,] the appearance of human society is a large-scale metasystem transition in which the subsystems being integrated are whole organisms. On this level it may be compared with the development of multicellular organisms from unicellular ones. But its significance, its revolutionary importance, is immeasurably greater."[353]*

Teilhard de Chardin: *"From the point of view of physics, this super-centration corresponds to the accumulation in each nucleus of an ever greater number more varied and better arranged particles; from the point of view of psychology, this same super-centration expresses itself in an increase of spontaneity and consciousness."[354]*

The direction of life's evolution is the opposite of disorder; living systems maximize power (or empower) intake (participating in entropy-maximization or minimization of free energy, depending on how you want to see it); thermodynamics pushes life towards novel synergies and emergent properties; and individuals evolve through metasystem transitions toward increasing organizational complexity and consciousness. All of this corresponds to the "awakening" of a planet-spanning mind.

These patterns have steered us towards this new inflection point. Ever since the "microbial global brain" proved to be greater than the sum of its parts, it has only been a matter of time that some kind of human-level intelligence would arrive at an isomorphic transition. Through the individuation process of the hyperorganism, we hope to embody the progressive illumination of minds, the perfection of our moral duty to love, and the deepening appreciation of our universal interconnection. In so doing, we will be walking a path that serves not only the resolution of any crisis, but fundamentally changes our relationship to any current or future metacrisis.

Cadell Last: *"Such a system will represent a qualitatively new level of complexity and organization, a new metasystem, which would allow humans to solve planetary problems (i.e. global warming and socio-economic inequality), consequently opening up the possibility space for new levels of freedom and opportunity… From the application of metasystem transition theory to the human system, we can identify three major system transitions throughout the evolution of our genus Homo. On each occasion, a new level of organization has emerged, which has been stabilized by higher controls and*

higher group selection. These metasystems broadly include systems commonly referred to as 'band/tribe', 'chiefdom/kingdom', and 'nation-state/ international' organizations… In this framework of thinking about the human system, the modern nation-state sits atop an ancient evolutionary set of metasystem control hierarchies of ever more diversely integrated subsystems… The question for the contemporary nation-state organization is how it can help open up the space for a higher level of organization that is capable of tackling challenges on a higher order of structure than is possible in our current system."[355]

Collective Intelligence

Elements:
- A live model of the world
- Observation
- Focus
- Memory
- Empathy
- Motor coordination
- Creativity
- Judgement
- Wisdom

Organizing Principles:
1. **Autonomy** – Agents have power within the collective
2. **Balance** – The elements of collective intelligence are integrated into an environment-sensitive balance
3. **Focus** – Knowing what to pay attention to and what to ignore; what's relevant on different scales
4. **Reflection** – Recursive knowledge using feedback loops; thinking about things, changing the patterns of how we think about things
5. **Integration** – Coherence between thought and action

Credit: "Big Mind" by Geoff Mulgan

Metarevolutionaries understand that a metacrisis can't be resolved without coherence between complex systems of all kinds, which ultimately means learning to organize in new ways that are up to the present challenges of our metacrisis: Meeting complexity with complexity. Forming a hyperorganism means, among other things, creating collective intelligence which is greater than the sum of its parts, with the requisite variety to absorb the variety of its environment. It is a goal in itself and serves as a model for the way we must similarly transform and amplify other human capacities like sensation, prediction, imagination, and love.

A human metasystem is very different from one composed of ants or bees, unless things have gone horribly wrong. We are highly self-aware, self-assertive creatures who must find a way to come together without losing ourselves to the crowd. Our global brain must be like a family of minds—mutually supportive and not collectively repressive. That kind of collective intelligence should conjure a feeling of individual opportunity—in the same way one might feel empowered by one's access to the internet or other components of our nascent global brain.

Francis Heylighen: *"The Global Brain would empower individuals and promote bottom-up self-organization, by giving everyone free access to the most advanced information, knowledge and tools for communication, organization and action."[356]*

By interacting with each other on the promise to reciprocally uphold certain values, we afford ourselves a future better than any alternatives. By stepping outside of our individual selfhood, we create a whole greater than the sum of its parts. We are organisms within a hyperorganism—and a primary challenge for metarevolutionaries is forming the kinds of metasystems which maximally support the freedom and wholeness of individuals.

But there is the ever-present danger of the integrated whole asserting its own goals which supersede the desires of the individual. This is where a global brain can transform into a "hive mind". These fears are not unfounded, but the real danger is inaction: Metarevolution must perennially close the doors which lead to the nightmarish realities of our metacrisis, rather than closing our eyes to its grim possibilities and hoping for the best. As we see it, the ideal collective intelligence is one that serves an expanding expression of

love towards all living beings and the planet itself, and is simultaneously a fountain which refreshes the autonomy and wholeness of every individual who drinks from it.

Metarevolution, in this scenario and others, seeks the timely, spontaneous, cooperative, and utterly necessary union of two oppositional tendencies: self-assertion and self-transcendence. We seek a healthy relationship between people and the larger systems we form, because the only alternatives are a pathologically fractured or pathologically unified world. We must love each other into existence as complete individuals. And parts, unlike holons, are not free in relation to their metasystems, and therefore lack the complete personhood that is necessary for love. In order of increasing preference, according to Victor Frankl, a person can use, encounter, or love another—and it is only in the case of the latter that we are fully appreciating each individual.

Victor Frankl: *"On the human level, I do not use another human being but I encounter him, which means I fully recognize his humanness; and if I take another step by fully recognizing, beyond his humanness as a human being, his uniqueness as a person, it is even more than an encounter—what then takes place is love."[357]*

How can we be free and whole, and also form a yet-larger whole which does not steal our individuality? It begins with loving, rather than using or encountering, all other holons.

The purpose of taking the perspective of our hyperorganism is to face reality: We can't ignore it out of existence. An unethical, totalitarian, freedom-destroying hyperorganism will become the globally-dominant force in our lives if we do not fill the "niche" with something that assures the wholeness of individuals. Ben Goertzel contrasts the dystopian view of *"Star Trek"* with the metasystem dynamics imagined by Valentin Turchin.

Ben Goertzel: *"Shadows of the sci-fi notion of a 'hive mind' arise here...[along with images of] the Borg Collective from Star Trek. But what Turchin is hoping for is something much more benign: a social structure that permits us our autonomy, but channels our efforts in more productive directions, guided by the good of the whole."[358]*

Valentin Turchin: *"[Yes,] for a cybernetician the word 'hierarchy' has positive emotional connotations. He always tries to set up a hierarchy, because hierarchy is organization—it is structure. Large systems can only be organized hierarchically. The antithesis of hierarchy is chaos, not freedom."[359]*

Any metasystem, superorganism, or hyperorganism is composed hierarchically. Though many equate hierarchies with dysfunctional power dynamics and fears of a centralized, top-down world government, these are exactly the things a good hyperorganism can stand against and prevent. Hence, our metarevolution seeks a worldview which encompasses the idea that there are no true "parts" and "wholes", only holons within holons. In addition, hierarchies can embody different types of power dynamics—especially "power-over" and "power-with". Riane Eisler explores two symbols of power, the chalice and the blade, as representative of these two very different kinds of power dynamics which lead to radically different types of hierarchies.

The blade represents the more familiar connotation of hierarchy as the organization of power-over others through violence. It is part of the win-lose worldview. While the chalice represents power-with others through partnership.

Riane Eisler: *"This leads to a critical distinction between two very different kinds of hierarchies that is not made in conventional usage. As used here, the term hierarchy refers to systems of human rankings based on force or the threat of force. These domination hierarchies are very different from a second type of hierarchy, which I propose be called actualization hierarchies. These are the familiar hierarchies of systems within systems, for example, of molecules, cells, and organs of the body: a progression toward a higher, more evolved, and more complex level of function. By contrast, as we may see all around us, domination hierarchies characteristically inhibit the actualization of higher functions, not only in the overall social system, but also in the individual human."[360]*

The chalice is a symbol of the win-win outcome that may be possible given the structure of the game—and the blade is a symbol of the kind of strategy which, by its strength, is evolutionarily stable but in many ways inferior. The chalice reveals the possibility of conditionally cooperative strategies which turn a race-to-the-bottom into a race-to-the-top. The latter is

what a hyperorganism can embody, if only we can carefully and urgently steer the future in that direction.

We must take an active role in the creation of systems which are not (and never become) totalitarian in terms of the relationship of subsystems with metasystems. On the global scale, the metasystem known as a hyperorganism must be an emergent unity built on the bottom-up linking of power-with, not the bottom-up linking of power-over into a top-down structure of domination. The goal of forming a collective intelligence highlights these goals: There are both humanizing and dehumanizing ways a global brain might be formed.

Arthur Koestler: *"To say it again, both the glory and the pathology of the human condition derive from our powers of self-transcendence, which are equally capable of turning us into artists, saints or killers, but more likely into killers… For the vast majority, throughout history, the only fulfillment of its need to belong, its craving for communion, was identification with clan, tribe, nation, Church, or party, submission to its leader, worship of its symbols, and uncritical, child-like acceptance of its emotionally saturated system of beliefs."[361]*

Teilhard de Chardin: *"[This is why we have said that] for one form of synthesis that brings freedom there are hundreds of others that lead only to the vilest forms of bondage. We are only too conscious of this; but how can we come together in such a way as to free ourselves? In virtue of the laws of moleculization, the problem obviously consists in finding the way of grouping ourselves together not 'tangentially', in the nexus of an extrinsic activity or function, but 'radially', center to center; how to associate in such a way as, by synthesis, to stimulate deep within ourselves a progress that is directly centric in nature. In other words, what we have to do is to love one another because love is equally by definition the name we give to 'inter-centric' actions. By its nature, love is the only synthesizing energy whose differentiating action can super-personalize us. But just how can one ever contrive to love a multitude? If we set the two words side by side, love and multitude, surely they enclose a contradiction? The antinomy provides its own solution as soon as we see that in a center of our own centers it is possible for us to meet together."[362]*

Valentin Turchin: *"[There is a kind of integration that is] built from the bottom up by means of sequential metasystem transitions in which each*

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new level, instead of eliminating the functions of the preceding level, creates yet more functions of a different kind—a new kind of activity… An example of cybernetic integration would be a human hand with its fingers unhampered by pressure from other fingers and controlled from a common center—the brain. This is the hand that can perform an operation or play a piano. The fist, however, is a symbol of mechanistic, totalitarian integration: it can only batter, destroy, annihilate. Totalitarian integration is a million-fingered fist drawn back for a blow at humanity."[363]

How can we ensure that present and ongoing metasystem transitions embody desire for the Good? This metarevolution can't possibly be a call to slay our hyperorganism or halt its evolution. But we can, as we've been exploring, form a hyperorganism which outcompetes and obsoletes the sociopathic strategies which dominate the world. But we need a real "We"—including a mutual understanding of our interconnectedness and the systems of communication and control that all organisms rely on.

Our metarevolution seeks a dynamic holarchy which unifies the oppositional drives of holons at the personal, local, and global levels. We must reject solutions which feature any flavor of top-down hierarchy or non-hierarchy ("flat hierarchy") as equally nonsensical. We need a kind of holarchy in which the underlying condition of individual freedom is immutable. Holons' Janus-like attention towards the paradoxical tendencies of self-assertiveness and self-transcendence can be either the problem or the solution. We can't be truly free or truly our whole selves without self-transcending, and we can't form a healthy and ethical hyperorganism without constantly reasserting the wholeness of each person. Nor, finally, can we support social and political holons which under-integrate humans, sacrificing "We" to "I", or over-integrate humans, sacrificing "I" to "We". What's needed is a higher-order synthesis, a unity of opposites, which incorporates and balances both. This is the essence of the holon's partness-wholeness, the holarchy's flexible organization of power, and Janus's symbolism as a paradox-resolving complex of opposites. With a pair of eyes on individuality, and a pair on community, we are assured a path to both at once.

So we must, in one motion, make our metarevolution about global and personal development. We want, for example, collective intelligence which

makes us individually more capable people, not deterministically controlled gears in a grand machine. If "stepping outside" of ourselves makes us more dependent on the whole—if coming together results in the We-over-Me sacrifice—then all is lost. However, if our integrative tendency empowers us as individuals, increases our ability to make sense of the world, and acts as a bridge between Value and meaning, then we are on the right track.

All of this is to say: To take the perspective of a hyperorganism runs the risk of dehumanization, or at least the aesthetic of it. Metarevolution is oriented towards the obsoletion of many things, but humanity is not one of them. Without care, either the self-assertive or integrative tendency can take over instead of acting as mutually-balancing feedback loops.

We avoid totalitarian integration and the subsequent muting of individuality only if we pay attention equally to Value and Action at every scale of that holarchy. So we commit ourselves to healthy integration, in balance with self-assertion, in the view that metasystem transitions can open up far more doors than they close. Most importantly, with people as the constitutive systems, we seek to create metasystems which are minimally coercive and maximally supportive of freedom and creativity—as in the open hand rather than the closed fist.

The reason for self-assertion is that individual wholeness is a prerequisite for human community—without it, there is tyranny in place of community, and homogeneity in place of spontaneity.

The reason for self-transcendence is that organisms and hyperorganisms alike need to be able to sense and process information, make predictions, and take action. In order to think and act in ways that ensure ongoing survival (through power-maximization and free-energy minimization), an information channel must have the capacity to handle a certain flow of bits—like a pipe built to handle up to a certain flow of water. The total bandwidth of the action-center, whether human or hyperorganism, is determined by this channel capacity as well as the signal-to-noise ratio of the information source. This means that to navigate the complexity of our world, we must organize and cooperate in such a way that our individual channel capacities form a new whole which is greater than the sum of its parts. A

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hyperorganism, not a human, is the correct scale at which to face our greatest challenges.

And the reason for wanting a dynamic balance between the self-assertive and self-transcending tendencies has already been stated: At the extreme end of either, power rules, and it is only in the actively-mediated middle where love, reason, and spontaneous cooperation have the final say.

Beyond these fundamental concerns about the characteristics that a hyperorganism embodies at any given moment, and the thermodynamic and natural laws which drive evolutionary complexification, there are other critical areas of intelligence, such as prediction and sensation, to consider. These must also be translated from individual to collective. We'll return to those topics soon. For now, we must stay focused on certain aspects of cognition in a hyperorganism, because our existence depends on it.

The complexity of our world, as measured by its variety of possible states, is something we must mathematically "absorb" with a variety of control-states if we hope to survive. This is the Law of Requisite Variety. When the complexity of a metacrisis exceeds our complexity as action-centers, metarevolutionary principles tell us that we must achieve some kind of center-of-centers which will benefit from synergy, emergence, and amplification of individual traits such as intelligence.

Ross Ashby: *"What is an amplifier? An amplifier, in general, is a device that, if given a little of something, will emit a lot of it. A sound amplifier, if given a little sound (into a microphone) will emit a lot of sound… Such devices work by having available a generous reservoir of what is to be emitted, and then using the input to act as controller to the flow from the reservoir."*[364]

H.T. Odum & Elisabeth Odum: *"In electronics the inflow that is amplified is called the signal and the second source of energy is called the power supply… In economic discussions a small effect is called an amplifier when it interacts with another flow to cause a larger effect… Amplification implies flows of two qualities of energy. The low-quality flow supplies a large quantity of calories; the high-quality flow supplies the controlling action with a small quantity of calories."*[365]

Ross Ashby: *"This is the sense in which 'amplifying' regulation is to be understood. The law of Requisite Variety, like the law of Conservation of Energy, absolutely prohibits any direct and simple magnification but it does not prohibit supplementation."*[366]

Which is to say, our brains and societies are inherently bounded in what they can do by their information channel capacity. If our environment

Internet Intelligence

Principles:

1. **Optimal Connectivity** – There is an optimal range of connectivity in a complex system. When the connectivity is too small, or too large, the system's functioning in its environment is relatively unintelligent.

2. **The Edge of Chaos** – In a complex system, there tend to be large regions of parameter space leading to chaotic behavior, as well as large regions leading to repetitive behavior. The regions leading to complex behavior tend not to be embedded entirely in the chaotic or repetitive regions but rather to border both.

3. **The Law of Mind** – In an intelligent system, activity in one component x tends to cause activity in other components y such that structure(x) and structure(y) are similar.

4. **Metasystem Dynamics** – The most intelligent systems are those in which it is a pattern that the major subsystems cause each other to act more intelligently.

Credit: "Creating Internet Intelligence" by Ben Goertzel

has greater variety than our variety "regulators" (such as a personal or global brain, or any information channel), then we have not achieved requisite variety in regard to our metacrisis. It is a formula which spells chaos and death, and challenges us to get on "the right side" of complexity. We will always fall short, but trying is everything.

In this context, the metarevolutionary principle to keep in mind has to do with brain-like metasystems which act as reservoirs and amplifiers of human and artificial intelligence (by releasing action-potential selectively, in forethought of its exhaustibility), such that it serves our highest goals. Put another way, it is not true collective intelligence if it is just the reservoir. A collective intelligence also needs to know what to pay attention to, and to thereby intelligently amplify intelligence.

Individual brains are excellent at controlling "bad" variety, all things considered. But they came together in our deep past, when people were unlikely to know more than 150 or so other people, and there were no globe-spanning social-political-economic systems. The world changed faster than we did, and now the complexity of our metacrisis far exceeds our complexity-based abilities to face our biggest challenges. So, rather than jumping into the fray of crises as revolutionaries, it is our job to act as metarevolutionaries by first addressing the underlying principles of all change.

Marios Kyriazis: *"It can be argued that the continual enhancement of brain function in humans, i.e. the tendency to an increasing intellectual sophistication, broadly aligns well with the main direction of evolution. This tendency to an increasing intellectual sophistication also obeys Ashby's Law of Requisite Variety which essentially states that, for any system to be stable, the number of states of its control mechanisms must be greater than the number of states in the system being controlled. This means that, within an ever-increasing technological environment, we must continue to increase our brain function (mostly through using, or merging with, technology)."*[367]

Ross Ashby: *"The gene-pattern, as a store or channel for variety, has limited capacity. Survival goes especially to those species that use the capacity efficiently… It can be used directly or indirectly… The direct use occurs when the gene-pattern is used directly to specify the regulator. The regulator is made (in the embryo) and the organism passes its life responding to each*

disturbance as the gene-pattern has determined. Amplification does not occur… The indirect use occurs when the gene-pattern builds a regulator (R1) whose action is to build the main regulator (R2), especially if this process is raised through several orders or levels. By achieving the ultimate regulation through stages, the possibility of large-scale supplementation occurs, and thus

Effective Superminds

Factors:

- **Average social perceptiveness of the group members** – measured using a test called Reading the Mind in the Eyes, in which people looked at pictures of other people's eyes and tried to guess the mental state of the person in the picture. Groups with a higher proportion of women tend to be more intelligent

- **Group members participate about equally in conversation** – When one or two people dominated the conversation, the group was, on average, less intelligent than when participation was more evenly distributed

Cognitive styles:

The most collectively intelligent groups have an intermediate level of diversity of:

1. **Verbalizers** – good at reasoning with words

2. **Object visualizers** – good at dealing with the overall properties of images (like paintings)

3. **Spatial visualizers** – good at analyzing images part by part (as in an architectural blueprint)

Credit: "Superminds" by Thomas Malone

the possibility of an ultimate regulation far greater than could be achieved by the gene-pattern directly… May it not be possible that the amplification can be increased even further? If so, is there not a possibility that we can use our present powers of regulation to form a more highly developed regulator, of much more than human capacity, that can regulate the various ills that occur in society, which, in relation to us, is a very large system?… Let no one say that it cannot be done, for the gene-patterns do it every time they form a brain that grows up to be something better than the gene-pattern could have specified in detail. What is new is that we can now do it synthetically, consciously, deliberately."[368]

Thomas Malone: *"[Here we see] the surprisingly important idea that many people still don't really appreciate: Long before we have general AI, we can create more and more collectively intelligent systems by building societies of mind that include both human and machine agents."*[369]

Metcalf, Askay & Rosenberg: *"Diverging from the dominant discourse that predicts the rise of machines, emerging research is beginning to explore the ways in which AI can elevate human capabilities rather than replace them… When machines and people are connected in the right ways, they can achieve greater intelligence and make better decisions."*[370]

To make the idea of "societies of mind" less nebulous, let's consider a concrete method for amplifying intelligence. The name of this method, "swarming" or "swarm intelligence" (SI) once again provokes us to consider being outraged at comparisons between humans and insects. But elevating the achievements of insects and engaging in biomimicry should not equate to diminishment of humanity. There is so much to learn in the world beyond humans.

Rosenberg, Pescetelli & Willcox: *"Across the natural world, many species have evolved methods for amplifying their decision-making accuracy by thinking together in real-time closed-loop systems. Known as Swarm Intelligence (SI) in the field of biology, the process has been deeply studied in schools of fish, flocks of birds, and swarms of bees."*[371]

As we face our metacrisis, it is our job to reach out and attempt to grasp the farthest edges of our potential. And swarming is one way for us to
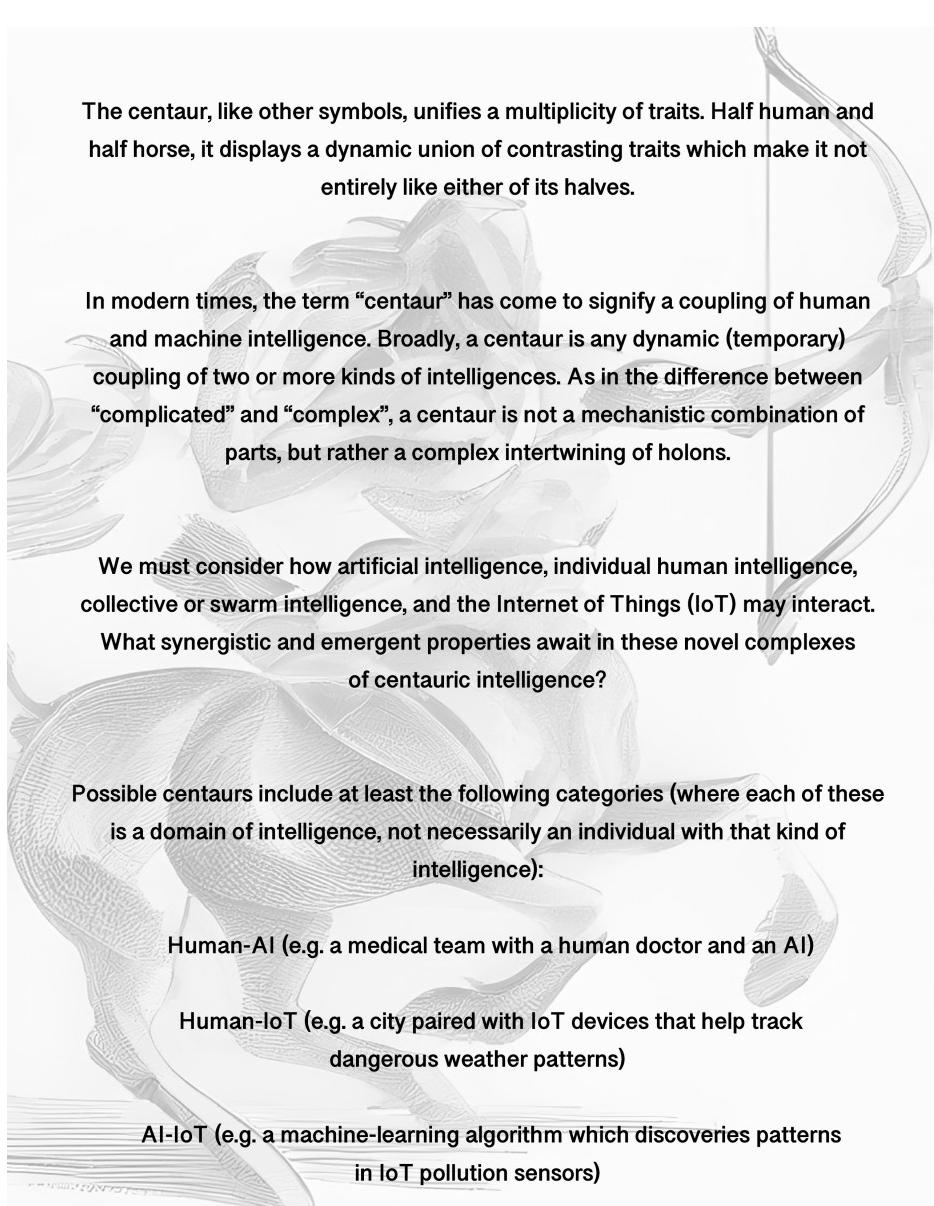
increase our action-complexity, our prediction and problem-solving abilities, and our likelihood of survival.

The centaur, like other symbols, unifies a multiplicity of traits. Half human and half horse, it displays a dynamic union of contrasting traits which make it not entirely like either of its halves.

In modern times, the term "centaur" has come to signify a coupling of human and machine intelligence. Broadly, a centaur is any dynamic (temporary) coupling of two or more kinds of intelligences. As in the difference between "complicated" and "complex", a centaur is not a mechanistic combination of parts, but rather a complex intertwining of holons.

We must consider how artificial intelligence, individual human intelligence, collective or swarm intelligence, and the Internet of Things (IoT) may interact. What synergistic and emergent properties await in these novel complexes of centauric intelligence?

Possible centaurs include at least the following categories (where each of these is a domain of intelligence, not necessarily an individual with that kind of intelligence):

Human-AI (e.g. a medical team with a human doctor and an AI)

Human-IoT (e.g. a city paired with IoT devices that help track dangerous weather patterns)

AI-IoT (e.g. a machine-learning algorithm which discoveries patterns in IoT pollution sensors)

H. Van Dyke Parunak: *"Biologists…define swarming as 'distributed problem-solving devices inspired by collective behavior of social insect colonies and other animal societies.' The use of the term to describe artificial*

systems can be traced to Beni, Hackwood, and Wang in the late 1980s. Their work focuses on populations of cellular robots, and they use the term to describe self-organization through local interactions."[372]

Rosenberg, Pescetelli & Willcox: *"The primary difference between 'crowds' and 'swarms' is that in crowd-based methods, individual participants provide their input in isolation (for statistical aggregation after the fact), while in swarm-based methods, groups 'think together' as real-time systems governed by intelligence algorithms and converge on solutions in synchrony… When viewed in this context, it becomes apparent that, while brains are systems of neurons structured so intelligence emerges, swarms are systems of brains structured so amplified intelligence emerges."*[373]

Geoff Mulgan: *"The linking up of people and machines makes possible dramatic jumps in collective intelligence. When this happens, the whole can be much more than the sum of its parts."*[374]

This is why we need a coherent and ethical metasystem of intelligent systems—one that lets us enter into a center-of-centers called "We"—while not losing the individual unity called "I". This is the only way for us to create a society which does not contain the seeds of its own demise. We need to overcome the ancient and present challenge of free-energy minimization in a world of accelerating complexification. It is a metarevolutionary goal—one whose fulfillment transforms the process of change itself, and opens the door which leads to all the splendid and maddeningly vast possibilities of life.

In our complex global society, making sense of our metacrisis as individuals has become a losing game. Bringing our abilities together through this next metasystem transition is a prerequisite for further social, political, or economic action which is not doomed to make a bad situation worse.

A metacrisis requires action on multiple fronts at once, and one must be aware of how crises dynamically interact with each other. Thus, it is worthwhile considering the goal of greater-than-individual intelligence in the context of other crises. To return to our Ariadnean example, a meaning crisis surely looms darkly over an intelligence crisis. What would it mean to participate in a metasystem of brains without any meaningful end to pursue? Would that not be like the tragedy of a great mind trapped in a dark cave?

Greater intelligence is not itself the way out of our meaning crisis. Yet, if we are able to resolve that crisis, it would have vast implications for the nature of a global brain: Will it be directed at the further discovery of meaning and the optimistic perfection of everything, or the further objectification of everything and the annihilation of ourselves? What determines the *telos* of collective intelligence?

Jonathan Rowson: *"Our predicament calls for a planetary-scale response that is both profoundly collective and deeply personal."*[375]

Further, we can see how these questions interact with a crisis in our game theoretic conditions: Will we simply become more intelligent while playing a game in which we are racing to the bottom and destroying the underlying conditions of the game?Collective intelligence without conditional cooperation would tragically accelerate our race to the bottom. Thus, there is a metarevolutionary principle which says we must be oriented towards creating game dynamics which liberate our tendency to trust, support, help, share, and love. In that context, a global brain becomes an awesome tool that opens new worlds and opportunities for everyone. We will return to these important game dynamics in a later section. For now, additional questions remain about how we can organize ourselves within a hyperorganism in such a way that channels collective abilities back into individual wholeness.

2.1.3

SENSATION

"Sensing and signaling between organisms gives rise to sensing and signaling within an organism."[376]

- Peter Godfrey-Smith

On the fictional Earth of Akira Toriyama's timeless *"Dragon Ball"* series, the human and human-like characters possess special powers. We follow the story of the Saiyans: human-like aliens who transform into giant apes during the full moon. It's hard to fully capture the lovable insanity of the *Dragon Ball* universe.

RZA: *"I mean, it's a cartoon, but it's one of the deepest cartoons in history. Its hero, Son Goku…goes off on a quest for seven dragon balls that unleash dragons that can grant wishes… It's also based on a sixteenth-century Chinese folk novel, about a Buddhist monk who travels to India to find the Buddhist sutras. That voyage represents a journey to enlightenment."*[377]

Canonically, everything in that universe, from a tree to a fish to a person, has a life-force, an energy, which can be sensed by Saiyans as well as some exceptionally-skilled humans. It's as plain to them as light is to our eyes. Throughout the show, we frequently hear the characters remark on the energy or "power levels" they are sensing, even when the source of the energy is halfway around the world.

Is it so unrealistic to think about Saiyans sensing "energy levels" from other living creatures? For metarevolutionaries, it is not only realistic, but necessary. We must ask: What is it like to be a hyperorganism? We need to answer this question as a matter of philosophy in the most practical (action-oriented) sense. If we don't know how a hyperorganism feels and senses and thinks, then our human actions will tend to have unexpected planetary externalities, because we will be perceiving the planet as an object from our own subjective perspectives, rather than as a person-like subject of its own. Violence hides in the shadow cast by objectification. Whether the conscious being made into an object is a person or a planet, the result is an antimoral betrayal of love.

So indeed, how does it feel to be a hyperorganism in our current world? It feels like being a tree unable to find healthy soil. It feels like being a fish inhabiting a coral reef that is suffocated by plastic and other pollution. It feels like a city suffocating itself with smoke. It feels like a town with no opportunities. It feels like the pain and hunger of people in poverty. It feels like a mass extinction event. It feels like removal from the real and subjugation to meaninglessness. It feels like bloody competition with people

we love, while knowing cooperation is possible. A hole in the ozone feels like a gunshot. Failing governments and economic paradigms feel like senility. It feels like helplessly looking the last of a species in the eyes as it dies. It feels absurd in its self-inflicting cruelty. It feels like a metacrisis.

An important step for metarevolution, therefore, is to create a new "internet of senses" (IoS) or "sense web" which can be in touch with pollution, over-extraction, and other such things that, taking the holarchic view of a hyperorganism, waste what is valuable and disfigure what could be beautiful. We can't, for reasons as different as money and morals, afford a pathologically anthropocentric view of life. As humans, however, we do possess uniquely advanced minds—and this comes with a certain moral duty. That duty involves putting to good use our capacity to step outside of ourselves in an empathetic excursion to a multiplicity of perspectives. Extending our senses is therefore a step towards the omniperspectival—which, in turn, is a step towards the perfection of love. We need a center-of-centers in the domain of sensation for the same reasons we discussed in regard to intelligence: In self-transcendence, we become more fully ourselves.

Next steps, to be discussed in works beyond this one, would involve integrating human and non-human senses, such that what it feels like to be a hyperorganism (or, for that matter, a dog, a dolphin, or a bat[378]) translates in some way to social, political, and economic signals. Our institutions would become a reflection of our internalization of what it feels like to be a hyperorganism.

L.A. Paul: *"What it is like to be a dog is very different from what it is like to be a human. Animals with radically different sensory equipment from ours have dramatically different experiences from us. An octopus experiences much of the world through its arms, which have independent abilities to sense and respond to stimuli. The octopus's arms may even have an independent ability to think for themselves, since the arms seem to act independently from the rest of the octopus under certain conditions. What is it like to have arms that can act and think for themselves?"[379]*

As a precaution and contrast to this train of thought, the "sense-bound" individual can still be considered tragically out of touch with what can be called the religious, spiritual, or "otherworldly" domain—which we've said

may in a naturalistic sense be thought of as the domain of the Good, which is the absolute which grounds the relative and the possibility of perfected value which may become actual. No matter the degree to which we extend senses, sensation is at best a metaphor that conveys our relationship to the Good.

Levels of Sensory Integration

Level	Types
Natural	Fully integrated with other senses and the central nervous system (e.g. Eyesight, biotechnology)
Interface	Can only sense by translation to our natural senses (e.g. Thermal imaging, haptic feedback)
Known unknown	Known but can't sense (e.g. Magnetoception, ultraviolet light)
Unknown unknown	Unaware, can't sense (e.g. ?)

More integrated

Less integrated
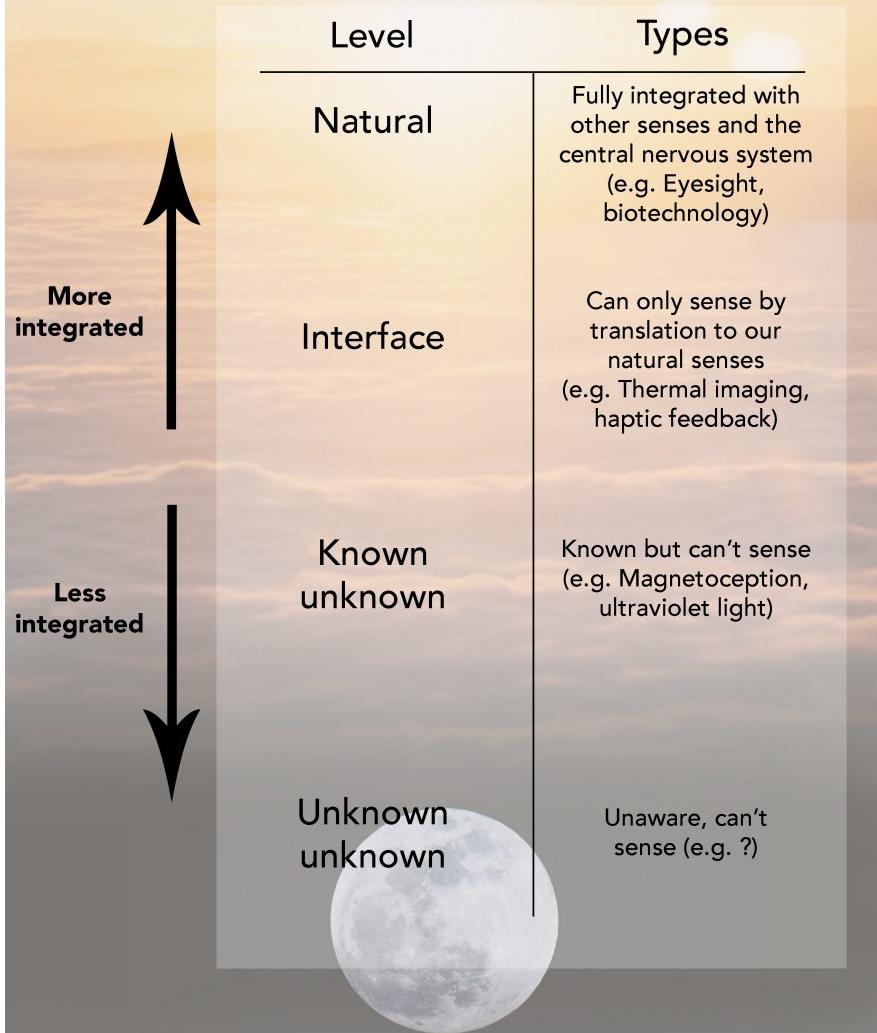
John Dourley: *"Both Jung and Tillich felt that the reduction of consciousness to a sense bound science worked to obscure such consciousness to the detriment of humanity and of its deeper religious proclivities."*[380]

So, just as collective intelligence is not sufficient on its own, collective senses must be considered alongside the discovery of meaning. And it is imagination, not sensation, that most closely describes the process which leads towards the actualization and contextualization of value, which is what we call "meaning". Later, we will take this subject on directly. But extending and transforming our current senses is doubtlessly valuable when considered next to collective intelligence and other bridges between "I" and "We".

To consider the current proto-IoS is to begin imagining what other senses exist out there in our admittedly Saiyanless reality: There are real examples of senses which are commonplace, yet outside of human perception, which can afford humanity a more loving relationship with the whole of reality.

A carrier pigeon, for example, is one animal which possesses magnetoception—the ability to sense Earth's magnetic field. Other animals have eyes which pick up parts of the light spectrum that are invisible to us. And others still are more deeply tuned-in to the world of sound through echolocation or the ability to detect higher or lower-pitched sounds than human ears. Our metarevolution is oriented to the simultaneous transformation of action-centers who go by "I" and "We". Stepping outside of the typical human sensory mode is one of the important principles of transformation.

In the context of our metarevolution, then, what can we learn from Saiyans and pigeons and octopuses? Obviously, a great deal. Our goal here initially is to know what it already, today, feels like to be a hyperorganism. We are bringing senses out of the unknown and into the light. Beyond that, our extended senses will allow us to be more connected with each other and the world, to become more collectively intelligent, and to experience more of the spectrum of beauty, which, like light, can be visible or invisible depending on the experiencer.

As a species, we are interested in more than survival—which has become a mere foundation upon which we stand and, yearning, attune ourselves ever more deeply to beauty, wisdom, and perfection. Along with other aspects of our hyperorganism we have yet to explore, personal sense-extension and metasystems of senses can help create the necessary conditions for a healthy human-planet relationship and greater depth of love. Such

interconnection has innumerable implications for how societies behave; we can only scratch the surface here.

One example of this paradigmatic shift in sensation is happening within militaries around the world. In short, in place of individual feedback loops of OODA (Observe, Orient, Decide, Act) and a linear "kill chain" command structure, we are seeing the beginnings of a decentralized "kill web". This may sound macabre, but there is a nonviolent lesson we can learn from it. The centralized, linear process of the kill chain is being replaced with the distributed decision-making process of the kill web or "Internet of Battlefield Things" (IoBT). The outcome is a decision-making process which is faster and more deadly. The kill web is made up of human intelligence coupled with machine intelligence, coupled with an array of sensors that seamlessly integrate additional "senses" like thermal imaging. A human fighter pilot becomes part of a collective intelligence which is greater than the sum of its parts. If we could just switch the core objective from "kill" to "love", the result could be more loving than the sum of its parts.

Hu, Sanjab & Saad: *"Emerging Internet of Things (IoT) technologies have led to significant changes in how autonomous systems are managed. In a military environment, IoT technologies provide new ways for managing and operating a battlefield by interconnecting combat equipment, soldier devices, and other battlefield resources. This integration of the IoT with military networks is referred to as the Internet of Battlefield Things (IoBT). In an IoBT, the connectivity between the wearables carried by the soldiers and other IoBT devices, such as multipurpose sensors, autonomous vehicles, and drones, plays a significant role in the mission-critical battlefield operations."[381]*

Jeff Hawkins: *"Intelligent machines could perceive the world through any sense found in nature as well as new senses of purely human design. Sonar, radar, and infrared vision are obvious examples of the kinds of nonhuman senses that we may want our intelligent machines to possess. But they are only the beginning. Far more interesting is the way intelligent machines could experience genuinely exotic, alien worlds of sensation… It is in the realm of exotic senses that, I suspect, the revolutionary uses of intelligent machines lie."[382]*

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What we should take forward from considering sensation in our hyperorganism is its echoing interaction with our own sensoriums. On the macro-end of sensation, it is best described as an Internet of Senses or "sense web"—a more friendly neighbor of the kill web—composed of nearly endless sensations from all kinds of organisms, superorganisms, and IoT devices. This, in a parallel with other domains which compose a hyperorganism, should convey a movement towards integration (the coherence of a new whole), not aggregation (the collection of a heap of objects). If our trajectory includes greater integration in the sensory domain, then we will know what it's like to be a hyperorganism; and to some degree it will know what it's like to be us. The amount of integration varies: two sense nodes in a sense web may capture different kinds of information, but also communicate their findings to the whole web. There may be a time ahead in which our sensory data is partially integrated with the "exotic" sense data of intelligence machines; and there may be a time ahead of that in which the exotic senses become fully our own.

Our collective intelligence as a hyperorganism, along with the rapidly progressing worlds of artificial intelligence and biotechnology portend an exciting future of sense-discovery and integration. And this in turn implies a more empathetic hyperorganism—which, once again, opens up many social and political questions outside the scope of this book, but doubtlessly worth considering. Opening ourselves up to brand new senses is as collectively necessary as it is individually desirable.

It is also individually necessary and collectively desirable. The free-energy principle suggests that sensation is something we must do as a matter of survival, whether organism or hyperorganism. We must predict, act, sense, and then update our mental maps to more closely resemble the outer territory, thus minimizing long-term average surprisal. It stands to reason that a hyperorganism will be a more effective free-energy minimizer if it has an integrated web of senses and greater information-processing abilities than individual organisms.

Jeff Hawkins: *"Imagine weather sensors spaced every fifty or so miles across a continent. These sensors would be analogous to the cells in a retina. At any point in time, two adjacent weather sensors will have a high correlation in their activity, just like two adjacent cells on a retina. There are*

large weather objects, such as storms and fronts that move and change over time, just as there are visual objects that move and change over time. By attaching this sensory array to a large cortical-like memory, we would enable the system to learn to predict the weather in the way that you and I learn to recognize objects and predict how they move over time… The intelligent weather machine would discover patterns that humans have not. It was only in the 1960s that the weather phenomenon known as El Niño was discovered. Our weather brain could find more patterns like El Niño, or learn how to predict tornadoes or monsoons far better than humans. Putting large amounts of weather data into a form that humans can readily understand is difficult; our weather brain, in contrast, would sense and think about weather directly."[383]

Through this kind of metarevolutionary change, we can minimize harm of both the accidental and intentional varieties and progressively pursue the perfection of value. We take actions stemming from our drive to care for each other, but are limited in our time and power as individuals. In this way, a hyperorganism can embody empathy, because only it can sense and mentally integrate the world in a truly holistic fashion. Collective intelligence and a web of senses, done right, can both provide a foundation for scaling up our capacity to respect and love the whole of reality. It's about deeply integrating into our own sense of "I" what it feels like to be "We".

Every individual has an "I" in their mental milieu which acts like eyes or other sense organs do upon their external environments: Both act as a subjective camera lens, and what is left out of the frame is often just as important as what was captured. And what that individual feels is his "will" is a ship forever pushed by the currents of attention—the cumulative effects of which build up in that sense of "I" and produce the experience of unencumbered choice.

Thus, sensation and attention act upon us and change the trajectory of our developmental transformations. These changes of selfhood are always informed by the dynamic looping of action, perception, and prediction—and all of these involve attention. Attention is restlessly and inexorably seeking the relatively valuable, which is valuable by relation to some absolute first principle. Thus, distraction is the main villain in the story of the Good's

actualization; and, conversely, attention to the Good implies that we will become more like our love-object: *imitatio bonum*. The collective sensation of the sense web, in similar fashion, is part of the attention apparatus of a hyperorganism, and so it informs the valence of all the information it processes in pursuit of reality's perfection.

Having discussed "upgrades" in intelligence and sensation, we have yet to put it all together in a way that puts complexification at the service of our universal perfection. There is more to a hyperorganism than a global brain or a sense web, important as these systems are to the whole metasystem. The following sections will put these great powers to great use.

2.1.4

TRUST, ORGANIZATION & OWNERSHIP

"If we do not take this moment to secure our sovereignty over the choices that our information age has allowed us to enjoy, we cannot reasonably blame its loss on those who are free to enrich themselves by taking it from us in a manner history has foretold."[384]

- Tim Wu

The previous sections naturally bring up concerns over the organizational structure, goal orientation, and morality of the center-of-centers we are calling a hyperorganism. At its core, there is a fear that any planetary systems (such as governments or the internet and other global information-communication technologies) are equal and coextensive with the tyranny of extreme centralization: Surely power, ownership, and wealth will accumulate in the hands of a few and enable tyrannical "dominator" hierarchies?

At the time of writing, it seems increasingly likely that the exciting new innovations of this century will be swallowed up by the excessively rich and disproportionately powerful, to the detriment of the vast majority of life, human or otherwise. Since this book ultimately takes the position that we must swim into the evolutionary currents which propel us towards a more developed hyperorganism, rather than treating it as a riptide we must fight against, we should take some time to address the above concerns as the shadow of an otherwise good and necessary idea.

We have already clarified some relevant notions like the Janus-like, bidirectional orientation of holons. The dynamic pull towards both self-assertiveness and self-transcendence sets up holarchies in which power flows both "up" and "down". Yet a simple question remains: If we aim to have planet-spanning ICTs such as the internet, collective intelligence, and a web of extended senses, who exactly owns and controls the "hardware" involved in these things? Our goal here is to imagine a way to bring our hyperorganism to life in such a way that values the human perspective, and does not over-privilege either human individuality or social community. If we can continue to see through our human eyes, and yet imagine the perspective of either a monad at the micro end or a hyperorganism at the macro end, we will be on the right track.

Let's begin with an ancient prophecy: It foretold that the titan Kronos, son of the deities representing the sky and earth—Uranus and Gaia—would have a son who would usurp him. Logically, there was only one thing for Kronos to do with this juicy information: Devour each of his children shortly after birth. Problem solved?

The plan worked at first, but the sixth time around, a little baby Zeus was born in secret, and survived long enough to overthrow Kronos. Tim Wu

describes the myth above to illustrate what he calls "the Cycle", which is an oscillation between open and closed (decentralized and centralized) information and technology systems—i.e. the history of ICTs resembles the relationship between Kronos and his children.

Tim Wu: *"And so derives the Kronos Effect: the efforts undertaken by a dominant company to consume its potential successors in their infancy."*[385]

Kronos, who dramatically trades future potential to pay for the present, also has connections to the "arrow of time"—and, in fact, symbolizes a sort of aberration of the natural tendencies of the universe.

Stephen Hawking: *"The increase of disorder or entropy with time is one example of what is called an arrow of time—something that gives a direction to time and distinguishes the past from the future. There are at least three different directions of time. First, there is the thermodynamic arrow of time—the direction of time in which disorder or entropy increases. Second, there is the psychological arrow of time. This is the direction in which we feel time passes—the direction of time in which we remember the past, but not the future. Third, there is the cosmological arrow of time. This is the direction of time in which the universe is expanding rather than contracting."*[386]

So who or what is Zeus—the force which can correct the arrow of time and allow the future to unfold—in the context of our story? In Wu's account of the Cycle, the conflicts of the Greek gods are allegorical for companies like Bell, AT&T, and Apple. In this drama, young, scrappy start-ups get swallowed by titans of industry: Power is centralized and innovation happens behind closed doors (order by Kronos); then power is challenged by a newcomer who sparks a period of decentralization and open innovation (order by Zeus).

Tim Wu: *"At the beginning of the 2010s, as a chasm opened between Google and its allies like Amazon, eBay, and nonprofits like Wikipedia on the one side and Apple, AT&T, and the entertainment conglomerates on the other, it was obvious that what loomed was just the latest iteration of the perennial ideological struggle into which every information industry is eventually swept. It is the old conflict between the concepts of the open system and the closed, between the forces of centralized order and those of dispersed variety. The*

antagonists assume new forms, the generals change, but essentially the same battles are fought over and over again. It is the very essence of the Cycle, which even a technology as radical and powerful as the Internet seems able at most to moderate but not to abolish… We now face squarely the question that the story told heretofore is meant to help us answer. Is the Internet really different? Every other invention of its kind has had its period of openness, only to become the basis of yet another information empire. Which is mightier: the radicalism of the Internet or the inevitability of the Cycle?"[387]

Wu traces the Cycle only up to around 2010. The following proceeds from Wu's question posed above. In the metarevolutionary view, the internet is necessary, but not sufficient for our broader goals—as Wu himself admits.

Tim Wu: *"It is true that the Internet naturally harnesses the power of decentralization and defies central control, but in the face of a determined power, that design alone is no adequate defense of what we hold most dear about the network."*[388]

To understand how we may form a non-tyrannical hyperorganism, let's examine ownership, organization, and control as they relate to important subsystems like the internet, IoT, and collective intelligence. The possibility of a positive, non-oppressive future depends on the creation of "Web 3.0"—the new fusion of the internet with blockchain, for this precise reason.

As in our earlier discussion, we need an appreciation for the power of integration, and its necessary balance with the opposing face of Janus which pulls back in the direction of self-assertion. So we should ask: How can we collectively operate an internet and other ICTs which at once allow us to be magnificently integrated and irrevocably individual? How can a center-of-centers be oriented towards individual-scale development and the flowering of freedom in everyone?

A hyperorganism embodies the progression of these systems towards metasystems which are even more complex and conscious. If we seek intelligence, sensation, and other necessary and desirable abilities at the level of a hyperorganism, then surely control and ownership of these systems are of key importance. Our metarevolution must, therefore, include a revolution of trust—and trust happens to be the beating heart of a technology called

"blockchain" or "decentralized ledger technology" (DLT). Consider the following story to understand the revolution of trust this technology heralds.

In a historical allegory in the Byzantine era, a young General is on a battlefield with his soldiers, a phalanx of strong young men. A city towards the horizon catches their attention, and the guys all seem particularly interested in the buxom castle at its center. One of the General's men wonders whether it's wise or necessary to anthropomorphically compare the castle to a woman, only to objectify and essentialize her as some kind of spoils of war. But, having considered the risk of voicing such an opinion, he instead merely posits that, in the spirit of war-tactician Sun Tzu, they should wait as long as possible to see how the other Generals and soldiers approach the city before advancing, themselves.

It's in this moment that the young General has a revelation: Sun Tzu was wrong. His men might have a better chance of living through the day if they play the waiting game, but if just one of the Generals makes this choice, the whole siege will fail. The group as a whole can achieve better results with cooperative action.

This is called the Byzantine Generals Problem, and it wasn't until 2008 that it was solved—long after all those Generals first faced this problem. And the solution, however different the setting is from Generals on a battlefield, shares the same form, and promises to transform trust, organization, and ownership.

Rather than rely on technical descriptions, which so far have obfuscated one of the most important developments of our era, it seems necessary to initially describe the core innovation of Bitcoin in a single word: Trust. Bitcoin, which people have taken to calling "digital gold", is more precisely "digital trust". It is trust-at-scale; trust which can survive and eventually become ubiquitous, even in our present state of distrust.

Prepare for perplexed looks from the next generation when you tell them about the internet before blockchain or "decentralized ledger" technology. Communication at this scale, without trust at the same scale, is a tragic comedy. We created something too powerful for us to control, and the result is the kind of metasystem transition which, like totalitarian government, is really a blind alley that halts further progress.

The internet, a metasystem, contains not just other ICTs as subsystems, but arguably also our political and economic systems which are arguably mediated by bits of information as much or even more than by barrels of oil. Therefore, any attempt by governments or corporations to be the control system for the global information system is antithetical to metarevolution. What we see is a metacrisis which calls for an Internet 3.0—the obsoletion of the middleman and the emergence of one of the key self-organizing systems of our hyperorganism.

Thus the puzzle for metarevolutionaries: If we wish to nourish our tendency to expand our sense of self to include other people and the planet as a whole, and to contribute to the ongoing creation of a loving society, how can we support the open exchange of information and avoid surrendering our wholeness and autonomy to a centralized conglomeration of self-interested governments and corporations? Blockchain's core promise is a way forward from this dilemma.

Consider the role of trust in the exchange of money. Throughout history, we haven't had a form of money which was safe, dependable and also highly scalable. It's harder than it seems to transfer money directly between people. That might seem like a strange claim since one can easily hand a dollar to another person. But there is a background of centralized trust behind even that simple transaction. There is a hidden middleman.

Michael Casey & Paul Vigna: *"The Medici of Florence came first, turning themselves into vital middlemen in the matching of money flows around Europe. The Medici's breakthrough was made possible because of their consistent use of double-entry ledgers. If a merchant in Rome wanted to sell something to a customer in Venice, these new ledgers solved the problem of trust between people who lived at great distances from each other. By debiting the payer's bank account, and crediting that of the payee with double-entry practices, the bankers were able to, in effect, move money without having to ship physical coins. In so doing they transformed the whole enterprise of payments… Just as important, they also established the 500-year practice of bankers creating an essential role for themselves as society's centralized trust-bearers."[389]*

Imagine now that we are a group of people who want to exchange money online. We don't know each other well enough to have any sort of accumulated, evidence-based trust. What we do have is an account balance, and the ability to record in a ledger both our own balance and the balance of everyone else in the group. The problem is, what if someone sends two people the same "virtual" dollar at the same time? How does the network of people determine which dollar is real and which one is a duplicate?

Satoshi Nakamoto: *"The problem of course is the payee can't verify that one of the owners did not double-spend the coin. A common solution is to introduce a trusted central authority, or mint, that checks every transaction for double spending... The problem with this solution is that the fate of the entire money system depends on the company running the mint, with every transaction having to go through them."[390]*

The double-spending problem and the Byzantine General's problem are isomorphic. The Generals equal financial nodes, whether individuals or institutions; the city is a transaction; the call to charge at the city in unison is the attempt to unanimously verify the transaction; defection is double-spending.

A bank prevents this problem in its role as a middleman, but it centralizes financial power. Bitcoin is the first viable alternative—a person-to-person currency that can actually be trusted and never "double spent". This means the future of money can be a direct exchange between people in a way that doesn't require corporations or governments to be middlemen of trust. Trust will emerge in a decentralized network.

Decentralized trust is like a vital organ for a hyperorganism. It enables many other processes like collective intelligence, and infrastructure like the IoT or IoS, to be operated by a distributed network of real people. It is a mechanism for breaking the Cycle and making our most important ICTs permanently decentralized—or, even more precisely, self-organized. Consider the rapidly developing domain of artificial intelligence to appreciate what is at stake when we consider what underlying architecture enables the most important functions of society.

Gabriel Axel Montes & Ben Goertzel: *"To date, the overwhelming majority of AI development is done by a handful of technology mega-*

corporations (e.g. Facebook, Google, Amazon, IBM, Microsoft, Baidu, etc.). While the world's population is over 7 billion people, only around 10,000 people in roughly seven countries are writing the code for all of AI. By remaining in the hands of a few, the trajectory of AI applications may be significantly compromised. The authors herein propose an alternative path for the development of AI: a distributed, decentralized, and democratized market for AIs run on distributed ledger technology… SingularityNET is a platform for an open AI marketplace in which buyers and sellers exchange AI services via distributed ledger technology (DLT) and AI agents transact with each other. The DLT currently used by SingularityNET is blockchain. Blockchain uses distributed ledgers to establish consensus among the community rather than privately. A 'smart contract' contains if-then logic to enact agreements between two parties and automatically executes payment when the conditions stipulated in the contract are fulfilled. Blockchain allows for decentralized inter-party agreements without the need for a middle man. In this case, the parties would be AI merchants and AI agents within the network… With DLT as a foundation, a distributed, decentralized AI network can be enabled. With blockchain, the AI playing field can begin to level out. Independent developers can exercise fee-free ownership over their intellectual property, receive compensation for their work at a market price of their choosing, maintain data sovereignty and privacy, and transact with whom they wish in an open market.''[391]

This makes blockchain technology revolutionary beyond the domain of money. More broadly, it does for trust what the internet did for information: it makes it radically abundant; it brings the cost of trust way down. And, in the same motion, the wealth and power which we were compelled to cede to middlemen are returned to their rightful place—with the people.

Speculatively: We were stuck with placing trust in institutions which proceeded to prove that they did not deserve to be trusted; there was no alternative, so the practice of trusting one another fell into disrepair; this made us more dependent on the trust middlemen, which made them greedier and less accountable, because there was no power which could challenge them; this accelerated the collapse of trust in our institutions, sending peer-to-peer and institutionally-mediated trust to all-time lows. Blockchain, then, should be

expected to have the opposite effect: a positive feedback loop for trust. The more we disintermediate our bonds of trust, and the more that decentralized trust proves durable over time, the stronger trust will grow.

Public trust in government, United States, 1958 to 2015
Public trust in government (% who trust government in Washington always or most of the time)

Our World in Data

Source: Trust – PEW Research Center (2017)   OurWorldInData.org/trust • CC BY

Blockchain, in short, is exactly what it sounds like. It's a chain of blocks. The blocks, in the case of Bitcoin, record financial transactions in units of Bitcoin called "satoshi", after its inventor. But consider, most broadly, how decentralized ledgers allow us to disintermediate the process of trust.

This technology, to repeat, is a general-purpose organ which can supply trust to other vital processes in our hyperorganism. But to reach its full potential, we will need to explore what else you can put in those deceptively simple blocks. What if, instead of money, the block represented a contractual if-this-then-that line of computer code? In other words, it could execute a certain function if and only if some specific conditions are met. It would be a middleman without the middleman. In this context, blockchain can guarantee trust between individuals during a particular interaction, arrangement, contract, and so on. This function of blockchain is known as a smart contract.

Now we are in the domain of contracts, interactions, trust, and organization. Specifically, we wish to know: How can we make a binding

agreement without a middleman? Whether we want to reliably exchange money, or engage in complex, open-ended social organization, how can consensus be reached in such a decentralized network?

Where Bitcoin's application of blockchain is in the financial domain of decentralized trust, Ethereum makes another leap with its smart contracts, decentralized computing, decentralized autonomous organizations (DAOs), and non-fungible tokens (NFTs). It is the means by which the physical infrastructure which supports technology like the internet can become unbreakable and incorruptible. Remember, we are on a path of complexification, but we are not assured the kind of integration which leaves individuality intact. Blockchain, Bitcoin, and Ethereum point towards a version of our future in which the individual and the hyperorganism maintain a dynamic tensegrity. We will briefly explore these extensions of blockchain technology, and make the point that it offers the only currently known path to a non-tyrannical hyperorganism.

The main premise of the Cycle, revealed by Tim Wu, is that many decentralized ICTs have been swallowed up and centralized in the past, and that this trend is likely to continue. That would be disastrous for a world which is simultaneously heading towards a nonlinear increase of interconnectedness.

Sarvesh Mathi: *"Think of the undersea cable network as the new economic trade routes and the commodity in transit as data—arguably the most important commodity of the Information Age. Amazon, Microsoft and Google own close to 65 percent market share in cloud data storage. This makes them major exporters and importers of data. Imagine them forming an oligopoly to own the routes used to transfer any data. Of course, end consumers would benefit from reduced prices that are passed on by the content providers, who now enjoy large economies of scale from owning cables. But smaller companies looking to compete will be at a disadvantage. They, or anyone else looking to use these cables, could be charged a higher price for bandwidth. This is no different from an oil cartel in some aspects… The evolutionary-cybernetic conception of the Global Brain as a model of the networked society based on distributed intelligent technologies is an attractive*

Blockchain technology enables…

"**Inviolable property registration**, which people can use to prove that they own their houses, cars, or other assets

Real-time direct bank-to-bank settlement of securities exchanges, which could unlock trillions of dollars in an interbank market that currently passes such transactions through dozens of specialized institutions in a process that takes two to seven days

Self-sovereign identities, which don't depend on a government or a company to assert a person's ID

Decentralized computing, which supplants the corporate business of cloud computing and web hosting with hard drives and processing power of ordinary users' computers

Decentralized Internet of Things transactions where devices can securely talk and transact with each other without the friction of an intermediary, making possible big advances in transportation and decentralized energy grids

Supply chains in which suppliers use a common data platform to share information about their business processes to greatly improve accountability, efficiency, and financing with the common purpose of producing a particular good

Decentralized media and content, which would empower musicians and artists, and in theory anyone who posts information of value, to the net to take charge of their digital content, knowing they can track and manage the use of this digital asset"

Credit: Michael J. Casey & Paul Vigna, "The Truth Machine"

idea that is also philosophically inspired, but it needs the supplement of political economy—of the ownership of undersea cables currently owned and being laid by Big Tech."[392]

Ethereum's promise, as a combination of blockchain and smart contracts, is to open up the possibility of a self-organized system which owns and controls our "global brain". In short, it is a massive, decentralized computer. Another way to conceive of this idea is that, should it scale up enough, it will enable the various subsystems of a hyperorganism and even the whole Earth to be self-owning.

Sarvesh Mathi: *"Who owns the physical infrastructure—the undersea cables—will govern the internet. It may well be that anti-trust legislation will not be powerful enough to prevent the privatization of the internet and the ownership of data, information, and knowledge. It is a likely scenario but this would be a tragedy for the Global Brain."*[393]

Main Uses of Ethereum

Decentralized computing
Energy-efficient digital currency
Smart Contracts
Decentralized Autonomous Organizations (DAOs)
Non-fungible tokens (NFTs)

It seems self-evidently preposterous that any company today would be trustworthy enough to act as a neutral information channel for the processes of collective intelligence and sensation. The only alternative to extreme centralization on one hand, and extreme disorganization on the other, is a self-organized network. We have the power, with the help of these technologies, to be our own source of trust and to collectively maintain the decentralized computing power needed for our global community. Such infrastructure provides the foundation for the increasing action-complexity which is

demanded by the increasing crisis-complexity of our metacrisis. And it does so without ceding ground to totalitarian, dehumanizing collectivism.

Ethereum uses smart contracts to achieve a revolutionary extension of blockchain. Not only does it allow us to run a decentralized computer, it can decentralize ideas. This, again, might not initially seem like a big deal—as with the apparent ease with which one can hand a dollar to another person. In this case, anyone can have an idea; it is quite hard to stop an idea from spreading due to its non-exhaustibility—when you share an idea you do not have any less of it.

But there is also a vast, international legal system which functions to bind the ownership of ideas to certain people or entities. We have copyrights, trademarks, patents—and all of these intertwine with corporations and governments and individuals. In today's world, you can't even prove who you are in absence of these overly-centralized middlemen. To some degree, in our modern world, you only are who you are because you have a government-issued ID—and because they have deigned not to revoke it.

Blockchain, in a refreshing twist, makes it possible for people to exist (in a legal sense) without the backing of a government, corporation, or other middleman. The immutability of the blockchain makes it the perfect way to store and immortalize identities.

In a similar way, then, blockchain is the perfect place for ideas to be born. Just as people do not want to rely on third parties to prove their identity, we should not have to rely on middlemen in the realm of ideas. Non-fungible tokens (NFTs) are an Ethereum-powered innovation which allow ideas to be self-sovereign. In other words, middlemen of trust are no longer needed to supply patents, copyrights, or identifications. An NFT represents an idea (which can be a political policy, a song, a prediction about the future, a recipe for cornbread, etc.) and confers rights of ownership to its holder.

Ethereum.Org: *"NFTs power a new creator economy where creators don't hand ownership of their content over to the platforms they use to publicize it. Ownership is baked into the content itself... As NFTs are essentially deeds, one day you could buy a car or home using ETH [Ethereum] and receive the deed as an NFT in return (in the same transaction). As things become increasingly high-tech, it's not hard to imagine a world where your*

Ethereum wallet becomes the key to your car or home—your door being unlocked by the cryptographic proof of ownership."[394]

Non-Fungible Tokens

If you own an NFT:

    1. You can easily prove you own it

    2. No one can manipulate it in any way

    3. You can sell it, and in some cases this will earn
       the original creator resale royalties

    4. Or, you can hold it forever, resting comfortably knowing
       your asset is secured by your wallet on Ethereum.

If you create an NFT:

    1. You can easily prove you're the creator

    2. You determine the scarcity

    3. You can earn royalties every time it's sold

    4. You can sell it on any NFT market or peer-to-peer.
       You're not locked in to any platform and you don't
       need anyone to intermediate.

Credit: Ethereum.Org

You become like a bank issuing a property deed—but the property's value is based on how we relate to the abstract (rather than physical) good it represents.

The final application of blockchain we should discuss is the "decentralized autonomous organization" (DAO). In short, it is a smart contract which encodes the structure and functions of a whole organization, rather than a single trust-based interaction. DAOs are many-lined smart contracts, detailed enough that they can be the underlying architecture of businesses, governments, or any other metasystem of individuals.

The reasons which make such a technology necessary should already be clear from the preceding discussion. A single world government or a global monopoly are forms of totalitarian integration; a planet-spanning metasystem of polycentric governance and decentralized organizations, in contrast, is a form of holarchic integration, and affords us a path to a non-tyrannical hyperorganism.

In sum, a hyperorganism needs to be able to think about and sense the world. Those functions rely on systems of ICTs which, historically, cyclically fall under the control of monopolistic, Kronos-like corporations and/or national governments. To achieve a non-oppressive future, we need blockchain and its various extensions we discussed which, altogether:

- Enables planetary communication, cognition, sensation, and prediction—core functions of our hyperorganism
- Enables new kinds of ownership and control which are decentralized and self-organized, and lets us build disintermediated bonds of trust
- Is both a development of information/communication/trust at the global level, and an ongoing genesis of these qualities in individuals—a feedback loop of empowerment
- Is antifragile to malware, downtime, censorship, manipulation, over-centralization, exponential technological development, and everything else that hangs above Internet 2.0 and the current generation of ICTs like the sword of Damocles. The following section will address this final point in more detail.

2.1.5

RISK & REWARD

"No stability without volatility."[395]

- Nassim Nicholas Taleb

Our information and communication technologies (ICTs) are some of the most important subsystems which compose the metasystem we call a hyperorganism. Many of these ICTs are also frighteningly fragile.

In the first half of the book, we addressed the concepts of fragility and antifragility and stated that all complex systems exist somewhere on this spectrum. We have just addressed the Kronos-like risk which makes ICTs vulnerable to over-centralization and tyranny. But, at the same time, trust technology was introduced as a possible solution—a way to convincingly end the Cycle and permanently overcome one recurring source of risk.

We have been exploring possible futures from multiple perspectives—from individual monads, to humans, to our hyperorganism. This requires us to understand the common patterns, features, and behaviors which are either invariant or at least self-similar at vastly different scales of organized complexity. And the next item on our list of concerns brings us back around to the topics of stability, fragility, risk, and reward.

All systems, in relation to known and unknown risks, can break suddenly, catastrophically, and even cause a cascade of system-failures throughout a metasystem. The more easily they break apart under duress, the more fragile they are; and, conversely, the stronger they get under that same duress, the more antifragile they are.

Nassim Nicholas Taleb: *"Anything that has more upside than downside from random events (or certain shocks) is antifragile; the reverse is fragile. Given the unattainability of perfect robustness, we need a mechanism by which the system regenerates itself continuously by using, rather than suffering from, random events, unpredictable shocks, stressors, and volatility."*[396]

Moving forward, it will be increasingly important for us to actively integrate antifragile design into our systems. We need our global family to be connected by antifragile systems of information and communication, which are not only resilient to risks, but are actively made stronger and more stable by them. A hyperorganism should achieve stability through volatility.

Nassim Nicholas Taleb: *"You get pseudo-order when you seek order; you only get a measure of order and control when you embrace randomness."*[397]

Let's explore a few changes which can begin to make this into a reality: Fractal modeling of risk, chaos engineering, and metasystems built with weak links. We will use these three examples to illustrate how we can progress towards antifragility and a better balance of risk and reward within our hyperorganism.

Earlier, we saw that fractal patterns occur through all kinds of self-organized complex systems. This feature of complexity means that, although chaos and randomness are present in these systems, they are also in some sense predictable. Financial markets, for example, are turbulent, but in such a way that it can be captured by a "science of turbulence". Two of Benoit Mandelbrot's students, Adlai Fisher and Laurent Calvet, developed a method for capturing the turbulence of markets through fractal patterns. They call it the "Markov-switching Multifractal" (MSM).

Adlai Fisher & Laurent Calvet: *"Earlier work in the natural sciences had focused on developing multifractal measures to represent the distribution of physical quantities, such as the distribution of minerals in the Earth's crust or the distribution of energy in turbulent dissipation... MSM produces good volatility forecasts, especially at longer horizons, and outperforms standard processes in- and out-of-sample."*[398]

A Markov-switching process involves a set of states and rules for how likely the system is to switch between them. When the states contain multifractals, a switch from one to another implies that key fractal properties have changed. These properties provide crucial information about how volatile a system is at a given moment, as well as related facts like the "dependency" in a series of changes (as in, within a financial market, if price shock X has a magnitude A, the next price shock Y will have a magnitude B which is proportionally dependent on X).

Multifractal modeling of systems is a universal mode of risk-analysis. It coheres with our view that self-similarity and fractal patterns occur in complex systems of all kinds. In our metamodern setting, these patterns reframe the very old idea of "correspondences" or the connection between microcosm and macrocosm. Using complexity science and mathematics, we may arrive at an analogous sense of interconnectedness which is no less miraculous than the supernaturally-tinged views of the past. Even without God

in the picture, we should remember that we reflect each other as well as the Good.
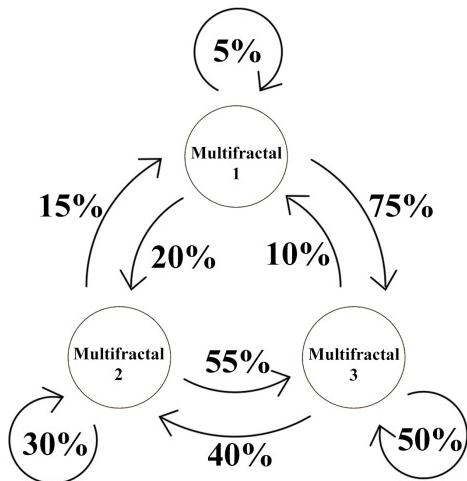
In a Markov-switching multifractal, each state contains a distribution of fractal dimensions and other variables. These variables tell us about the frequency and magnitude of extreme "tail events", the dependency between events (how much each event "reverberates"), and the system's relative speed (such as the unique "trading time" in financial markets).

Bobby Azarian: *"In mathematics, there is the concept of self-similarity, and a self-similar object is one that is similar in structure to one or more (or all) of its parts. Self-similarity is associated with fractal patterns, which emerge from recursively applied rules of design, and they exist all throughout nature, often in the form of the famous Fibonacci sequence, which we see in the seed arrangement of sunflowers, the spirals of galaxies, and the social organization of honeybee colonies. Systems that show self-similarity, like cybernetic systems with a hierarchical modular architecture, can in theory be understood in new ways through new kinds of high-level principles, like what mathematicians call a reflection principle. A reflection principle proves that the levels in a nested system can inform each other by revealing dynamics that might be hard to observe, for whatever reason, at some other level."[399]*

Our metarevolution aims to extend multifractal modeling a step beyond the financial domain. In the view that financial markets are self-organizing, complex systems whose patterns of turbulence are fractal in nature, it is proposed that a tool like the MSM, which models that turbulence, is applicable to all systems which can be described in the manner above. That includes living systems, economies, self-organized government, and more. Which means a multifractal view of risk, invariant to the type of value around which the system is organized, ensures that stakeholders approach an optimal level of risk and reward ("value at risk" or VaR, drawing from financial terms). More generally, we could say this shows how we can exist at "the edge of chaos" by hedging against risk in a way that is neither too cautious nor cavalier. With this approach, we give ourselves the gift of having the greatest-possible abundance in the face of any storm we encounter.

Having an accurate model of risk is the first step. The question arising from there is how to properly relate to this risk—in other words, how to balance exploration and exploitation (the dance between risk and reward) at the level of a hyperorganism. That leads us to consider methods for achieving stability through volatility. It may not be the shortest, easiest path, but it is the only viable path.

Consider what happens behind the scenes of a night spent watching Netflix. You may be surprised to learn that there is a troop of virtual monkeys who work around the clock to deliver your stable stream of videos. No insult to the real, hard-working Homo Sapiens at Netflix, their so-called "Simian Army" was introduced in 2011 as a way to make the platform less fragile—less susceptible to downtime, malware, and everything else which plagues ICTs. The monkeys achieve stability through induced volatility. They aim to become more antifragile by doing what is called "chaos engineering" or "fault injection".

Antonio García Martínez: *"In order to understand both the function and the name of the chaos monkey, imagine the following: a chimpanzee rampaging through a data center, one of the air-conditioned warehouses of blinking machines that power everything from Google to Facebook. He yanks cables here, smashes a box there, and generally tears up the place. The software chaos monkey does a virtual version of the same, shutting down*

random machines and processes at unexpected times. The challenge is to have your particular service—Facebook messaging, Google's Gmail, your startup's blog, whatever—survive the monkey's depredations.''[400]

The Simian Army started with "Chaos Monkey"—an idea founded on the antifragile principle of "fail fast". In other words, a little pain today saves us from worse pain tomorrow. And the internally-produced shocks of chaos allow Netflix to be more than just resilient.

Fail-fast Principle
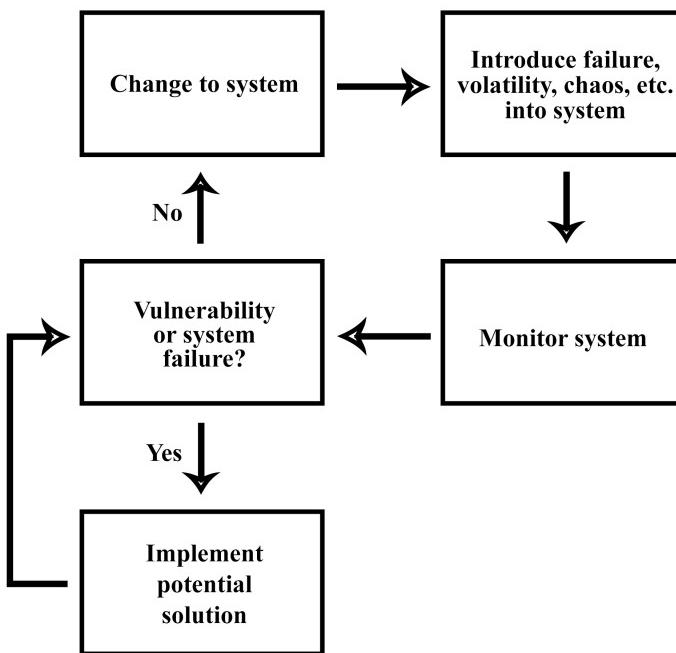
Credit: Kjell Jørgen Hole, "Anti-Fragile ICT Systems"

Existing on the edge of chaos, which is to say accepting in manageable bites that which is uncomfortable or dangerous, is what ultimately protects us from the accumulation and violent outburst of future disorder. The antifragile, as Taleb says, *"loves errors"*.[401]

Martin Monperrus: *"If you really 'love errors', you always want more of them. In software, one can create artificial errors using techniques called fault and failure injection. So, literally, software that 'loves errors'*

would continuously self-inject faults and perturbations… If the system can handle those injected faults, it is likely to handle real-world natural faults of the same nature.''[402]

So far, we've seen that as a whole we may use fractals to become more surefooted as we navigate risky terrain. Further, each system within a metasystem can engage in antifragile behaviors such as chaos engineering. But we can make our hyperorganism even less fragile by considering the complex intertwining of the many holons composing this holarchy. Every holon is linked to all others, directly or indirectly, and this link must fall within a spectrum of "weak" to "strong". Counterintuitively, weak links are generally desirable and strong links are generally undesirable. Weak links correlate with antifragility, while strong links correlate with fragility.

A sign of fragility in any system or metasystem is failure-propagation. Fragile ICTs are, for example, bad at containing viruses. In a global network, a local outbreak should not be able to spread too far or too fast, or the system as a whole could be overwhelmed. Similarly, fragile ICTs are susceptible to malware attacks, intrusions to privacy, and downtime—all the things we don't want. It is made up of multiple fragile components, like a vulnerable electric grid and monopolistic ISPs, and put together into an even more fragile whole. Inherent in this design is that a failure in one part cascades through the whole —a snowball becomes an avalanche. Hence, strong links contribute to the possibility that our planet as a whole will undergo a violent and catastrophic collapse, because a powerful shock anywhere in the system tends to reverberate in a series of self-similar shocks. The alternative is to consciously steer ourselves towards metasystems which are highly connected and integrated, but with weak links which reflexively break.

Kjell Jørgen Hole: *"Because a system of tightly interconnected units facilitates systemic failures, we need a system of modules with weak links that break when modules experience local failures.''*[403]

Weak links, in practice, will be achieved by simultaneously evolving towards a more developed hyperorganism, and more developed individuals. It means that in good times, cities and other complex organizational structures will be connected in order to achieve something which is greater than the sum

of its parts. And, in bad times, these systems will be self-sufficient enough to have the option of pragmatic isolation.

**Donella Meadows:** *"If subsystems can largely take care of*

Strongly-linked systems:

Any crisis or catastrophic failure will tend to cascade through the metasystem and cause many other system failures
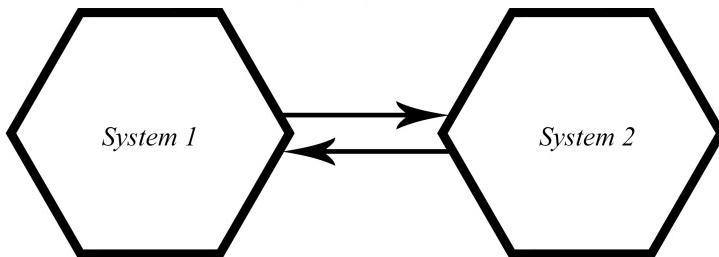
Weakly-linked systems:

Any crisis or catastrophic failure will tend to break that system off from its metasystem and isolate the system failure
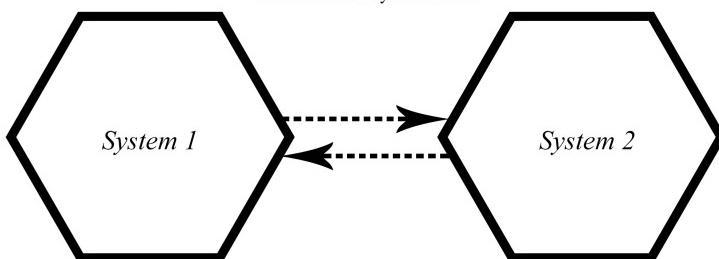
themselves, regulate themselves, maintain themselves, and yet serve the needs of the larger system, while the larger system coordinates and enhances the

functioning of the subsystems, a stable, resilient, and efficient structure results."[404]

These principles, and others, address fatal weaknesses of our current modes of interaction. They address how a metasystem such as a hyperorganism can be oriented towards surviving and thriving through an onslaught of volatility. We've said we must attempt to increase our action-complexity in order to match the complexity of our metacrisis; we must also develop antifragility as a complementary safeguard. If we consider this together with all that we've discussed so far, we can imagine a hyperorganism with a global brain, a web of senses, and other systems which bring action-centers into a center-of-centers. These systems run on blockchain-based ICTs and utilize smart contracts, NFTs, and DAOs, which makes our hyperorganism resistant to tyrannical capture and over-centralization. And the preceding ideas show how our ongoing evolution and the development towards greater complexity-consciousness can also lead towards a less breakable future.

Now, these are the kinds of functions made possible by a center-of-center. What we must add next is a theory of how an individual-made-of-individuals can come into being, while leaving in place the wholeness of each of those individuals. Tyranny is a form of coordination which holds together a dehumanized mass of objects; but what form of coordination holds us together as a community, and yet holds us apart as humanized individuals? What form of coordination leads to the simultaneous flowering of perfection in monads, humans, and hyperorganism alike?

2.1.6

COORDINATION

"Those who overcome great challenges will be changed, and often in unexpected ways. For our struggles enter our lives as unwelcome guests, but they bring valuable gifts. And once the pain subsides, the gifts remain. These gifts are life's true treasures, bought at great price, but cannot be acquired in any other way."

- Steve Goodier

We have seen how we might scale up our individual intelligence and sensory systems, and shown that blockchain-based technologies will allow these systems to be both global and decentralized. This section will illustrate a universal coordination mechanism, operative throughout the natural world, yet scarcely appreciated for its importance and unreleased potential within human society.

Consider a game: A group of friends decide to pass some time one afternoon by playing a word game called "Ghost". Going around in a circle, each player says a letter of the alphabet, adding it to the end of the existing string of letters from the other players. The challenge is to always be spelling a real word, but never to be the one to complete a whole word (usually with a minimum of four letters). The game of Ghost is a case of stigmergy—a process of intelligent coordination without any centralized coordinator; design with no designer; metasystem organization without tyrannical control.

Doyle, Marsh & Lewis: *"French biologist Pierre-Paul Grasse coined the term 'stigmergy' in 1959 to mean 'stimulation of workers by the performance they have achieved'. He combined the Greek equivalent of 'mark' and 'action'."*[405]

Francis Heylighen: *"[Stigmergy, then, is] an indirect, mediated mechanism of coordination between actions, in which the trace [or mark] of an action left on a medium stimulates the performance of a subsequent action."*[406]

The shared medium is the language of the players and its state-space of real words. Each letter strung together is a mark, or challenge, which invites further action. A player doesn't necessarily have to know what complete word will be formed, or what words the other players are trying to form. They only need to respond flexibly to the challenge in a way that aligns with the rules and goals of the games. Without any centralized control, patterns of group-level behavior emerge. Why? How?

What we are seeing in these games is a mechanism used all around the world, yet is largely veiled and unknown within human society. This is a powerful, universal coordination mechanism whose potential to shape our hyperorganism remains dormant.

Stigmergy

```
┌──────────────────┐         ┌──────────────────┐
│                  │  ───▶   │  Trace or "mark" │
│      Action      │         │     of action    │
│                  │         │                  │
└──────────────────┘         └──────────────────┘
        ▲                             │
        │                             ▼
┌──────────────────┐         ┌──────────────────┐
│  Agents perceive │         │                  │
│  traces of prior │  ◀───   │   Shared medium  │
│     actions      │         │                  │
└──────────────────┘         └──────────────────┘
```
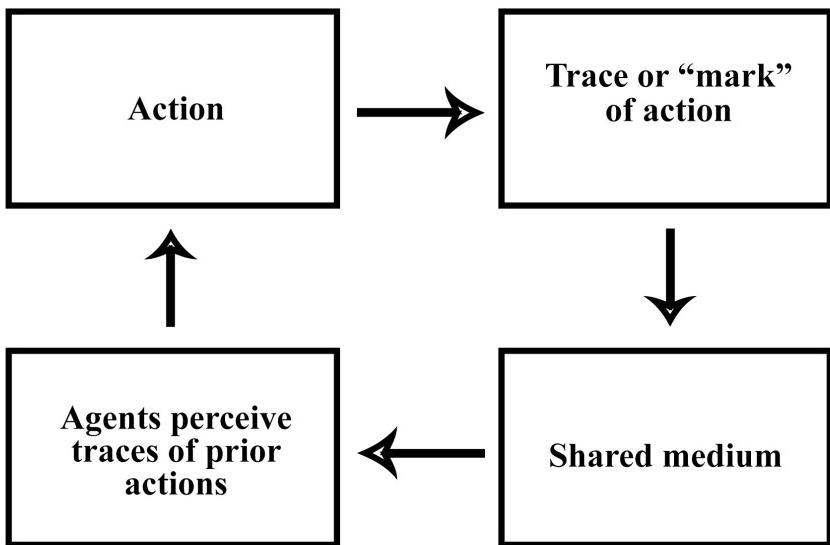
Francis Heylighen: *"[Stigmergy enables] complex, coordinated activity without any need for planning, control, communication, simultaneous presence, or even mutual awareness. The resulting self-organization is driven by a combination of positive and negative feedbacks, amplifying beneficial developments while suppressing errors."*[407]

It's the shockingly simple ingredient from which a cornucopia of complex systems are cooked up. A key goal of our metarevolution, in this light, is to fully understand and harness the power of human stigmergy. To get there, let's first consider stigmergy in the context of non-human animals.

Francis Heylighen: *"Termites wander around more or less randomly, carrying mud and depositing it here or there. However, the deposits that are created in this haphazard way then stimulate the insects to add more mud in the same place. Thus, the small heaps quickly grow into columns that eventually come together to form an intricate cathedral of interlocking arches. The only communication between the termites is indirect: the partially*

executed work of the ones provides information to the others about where to make their own contribution."[408]

Doyle, Marsh & Lewis: *"Significantly, the progression from one construction stage to another is stimulated by the work, and not the cooperation and collaboration of the termites. One thing leads to another without the benefit of a plan or supervision. The termite's stimulus–response behavior is modified as the project progresses by the work itself. Without a finished blueprint in their heads, or a coordinated group effort, simple termites are able to construct complex structures."[409]*

The stigmergic coordination of insect superorganisms results in the emergent properties which do not exist at the level of the individual insect. Similarly, although human intelligence is in a class of its own in the animal world, there is compelling evidence that we could make a similar jump in our collective abilities by utilizing the same method of self-organization that has long-served simpler lifeforms. Consider the following description of bee stigmergy.

Howard Bloom: *"A dish of sweetened water was placed outside the hive. The buzzing fliers soon found it and, following the leader, concentrated their collective attention on mining every glucose molecule the dish contained. The next day, the dish was moved to a location twice as far from the hive. The bees used three of those tricks which make a group brain thrive—hierarchy, information pooling, and imitation—to pinpoint the new target area. While the mass of followers clung meekly to their honeycombs, a handful of 'independent thinkers' flew about at will, testing one spot, then another, for food. The division of labor soon resulted in the discovery of the sugar dish's location."[410]*

Similarly, we find that stigmergy is omnipresent in the behavior of ants, and makes the colony (or superorganism) as a whole much more resilient and adaptable than any individual composing it.

Howard Bloom: *"The most important tools of data transmission among ants are chemical. A maverick ant, nosing about in unexplored territory, will stumble across food, eat her fill, then head slowly back toward the nest with her abdomen close to the ground. This is not post-meal lethargy. The ant is laying a liquid attractant for her sisters, who cannot resist the*

compulsion to follow in its wake. If they, too, find that the pickings at trails end are good, they will return in the same manner, sprinkling the chemical traces of their jubilation behind them. Thus a widening or waning scent trail encodes data on the richness of a food source, its ease of exploitation, and its gradual depletion… [It is] a form of collective memory."[411]

In relation to our hyperorganism, we have a mandate to scale-up in such a way that this unified metasystem is not a totalitarian integration (or objectification) of organisms, but rather an emergent property of free, cooperative self-organization based on a cascade of simple, local interactions. This ought to be the modus operandi of the next generation of human society. Stigmergy is the primary coordination mechanism for self-organization, which metarevolution must harness as the only viable alternative to the excess of either integration or disintegration offered within most of the prevailing paradigms of action.

Ross Ashby claimed that even genes can organize themselves to amplify their intelligence and other capabilities. And it has been shown that the most basic lifeforms are capable of stigmergy. Mythology even depicts zombie stigmergy. So again: Why not us?

Doyle, Marsh & Lewis: *"Stigmergy has been observed in ants, bees, fish, birds, artificial life boids, swarms, migrations, and robots equipped with flocking and foraging software."*[412]

Humans already make extensive use of stigmergy, just not where it counts the most. Consider a walk through the woods. The action (walking) leaves a trace (the tamped-down ground which looks different then its surroundings) which stimulates subsequent action (other humans following and reinforcing the trail). But these are hardly the upper limits of stigmergy. In fact, its subjugation to such trivial levels seems like a joke, considering its grand potential. There are some more advanced and important stigmergic arenas, as described below, but even these do not exhaust the potential of this universal coordination mechanism.

Doyle, Marsh & Lewis: *"Human stigmergy has been observed in a variety of activities, including traffic flow, elections, document editing of joint publications in Wikipedia.com, viral marketing, web site ranking by*

Google.com, collaborative filtering on Amazon.com, peer-to-peer sharing of music files, coordinated combat operations, and scheduling and planning.''[413]

Even more deeply, we should seek to harness human stigmergy as the mechanism which brings together the distributed intelligence of our hyperorganism, helps us make better predictions, and creates conditions where we may discover and actualize meaning. In other words, our metarevolution seeks the creation of a self-organizing metamind whose intelligence is greater than the sum of its parts. In so doing, we afford ourselves clearer vision of the world we live in, the world we wish to live in, and the path between the two. At the same time, stigmergic coordination frees us from external imposition of worldviews, acting instead as the mechanism through which we co-create our worldview: leaving traces in the shared medium of the Good itself, which stimulates the attention and action of other agents. As in the world of art, it is beauty which is the trace we leave in our environment, stimulating further attention to the Good.

Iris Murdoch: *"Beauty appears as the visible and accessible aspect of the Good. The Good itself is not visible."*[414]

If what we call "beautiful" is what is visible in light of the Good, one might argue that attention to the Good, and the implied obedience to beauty, is stigmergic. The Good is the medium in which an agent (any person, or even Mother Nature), leaves a trace (something beautiful, as in the creative worlds of art and science), which stimulates further action (attention to beauty which brings us into closer contact with the Good). Given this view, we can see from yet another angle that the ideal metasystem, our hyperorganism, can bridge what is with what could be. In this maximally-ethical, bottom-up process, every note you play on this grandest of pianos is a "challenge" to your fellow composers to choose which note to play next—and so on until we create a song more beautiful than any we could have imagined ourselves.

The game of Ghost and these other examples of stigmergy can be put to even greater use in the context of "challenges". Challenges are the common ground of "problems" and "opportunities"—negative and positive challenges, respectively—as well as neutral "activation".

Francis Heylighen: *"Negative challenges correspond to what we have called problems; positive challenges represent affordances for growth or*

progress. But note that these are not opposites but independent dimensions, since a challenge can carry both positive and negative valences. For example, for a hunter, an encounter with a wild boar is both an opportunity, since a wild boar has tasty meat, and a problem, since a wild boar is dangerous."[415]

A crisis is an extreme problem; a revolution is an extreme opportunity. We may build further upon these concepts by using "challenge propagation", which adds to the powers of stigmergy as a universal coordination mechanism, and affords metarevolutionaries a mode of purposeful, self-organized action.

Francis Heylighen: *"A challenge is a generalization of the notions of problem, opportunity and activation. It can be characterized by valence (positive or negative), prospect, mystery and difficulty. An agent's action on a challenge will typically 'relax' the challenge, but not resolve it altogether, so that some degree of challenge remains for further agents to act upon… The basic idea is to combine the notion of 'challenge'…with the notion of 'propagation' or 'spreading', which comes from models of neural networks, memetics, and complex systems, and which denotes the process by which some phenomenon is iteratively transmitted from a point in a node in a network to the neighboring nodes… Propagation occurs either via a shared medium in which challenging traces are left for others (stigmergy), or via a network of agent-to-agent links learned through reinforcement of successful transmissions."*[416]

Typically, challenges will have both positive and negative dimensions, or risks and rewards. Challenges elicit a stigmergic response, and acting upon a challenge leaves a trace in a shared medium which changes its overall state. The implication of a challenge is that it stimulates (to the point of near-necessity) some kind of action. As in, in confronting a challenge, inaction is the one true danger.

Francis Heylighen: *"A challenge incites action because it represents a situation in which not acting will lead to an overall lower fitness than acting —because the agent gains fitness by taking action, loses fitness by not taking action, or both. Thus, a challenge can be seen as a promise of fitness gain for action relative to inaction."*[417]

Yet, as with the friends playing a game of Ghost, there is creativity in each stigmergic step along the way. There is a challenge to build a real word,

so not just any letter will suffice. Yet the overall strategy and letter-choice remains flexible. This is why it is the best contender for a coordination mechanism which unites us in a common purpose while honoring our individual autonomy and wholeness.

Francis Heylighen: *"A challenge merely inspires or stimulates action, it does not impose it. The reason is that a complex situation will typically present many challenging phenomena, and the agent will not be able to act on all of them."*[418]

Here, a goal presents itself to us: We have a challenge to make the best use of challenges. Consider the following: Value and Action are mutually-transformative lovers; everything we experience is a state-space of challenges and is determined by a game whose first rule is that Value is present in Action, and all actions either perfect or destroy value-in-action. This game, and the field of moral affordances it presents, is the thing around which human stigmergy coordinates, and upon which it acts. As in, where ants use stigmergy to complexify in relation to the value-centric challenges which life presents them (such as finding food), humans are attuned to meaning—indeed, nourished by meaning—and we have our best chance at discovering it by working together, not alone. Consider again some existing forms of human stigmergy to appreciate how it is that we may, isomorphically, converge on meaning.

Francis Heylighen: *"A forum in the broadest sense can encompass everyone (e.g. anyone can read or write Wikipedia articles), just two people, or anything in between. We will use the term forum as the most general form of a 'meeting ground' where people can exchange challenges… Stigmergy is a mechanism whereby a challenge left by an agent in some medium or workspace that is shared with other agents stimulates those others to further address that challenge. For example, a paragraph added to a Wikipedia page by one person may incite a second person reading that page to add some extra details, a third one to add a reference for the new material, and a fourth one to correct a grammatical mistake. The reference may then be checked and more accurately formatted by a software agent. Here, challenges are spontaneously addressed by subsequent agents as mediated by the shared space (in this case the Wikipedia page)… In this case of stigmergy, a challenge remains available*

in a public medium or workspace that all agents can access. If an agent decides to take on the challenge, it will perform some actions that change the state of the challenge and then leave the modified challenge in the medium. At a later stage, some other agent may pick up the modified challenge, and perform some further work on it, again leaving the 'traces' of its work in the medium, where it can function as a challenge for some further agent. The 'workflow' from agent to agent self-organizes, as the one leaving the challenge does not know who will pick it up later."[419]

Later, we will return to the subject of challenge "forums", which can also be called "arenas" or "meeting grounds", and how we can use them as spaces of metarevolutionary action when combined with another form of human stigmergy: Markets. In financial markets, people take actions (buy/sell), leaving a trace of that action in the market price of an asset, which mediates the further action of other investors who are interacting with that same market. Markets are stigmergic coordinating mechanisms which enable self-organization and emergent properties, which metarevolutionaries view as preferable in many ways to centralized solutions, and likely the only viable way to organize ourselves in a complex world.

Another stigmergic forum which captures the power of this idea is already in use, though also remains underutilized: crowdfunding. In particular, metarevolutionaries hope to use this self-organizing process to build prize funds. Prize funds like the XPRIZE encourage creativity and innovation with huge benefits for society that generally exceed the initial prize in value.

XPRIZE: *"Incentive prize contests have existed for centuries. Rather than throw money at a problem, it's possible to incentivize the solution, inspiring and challenging the global crowd to solve it. From the inception of the Longitude prize in 1714, through the Orteig prize that compelled Charles Lindbergh to fly across the Atlantic, prizes have ignited passions and brought about breakthroughs that no one thought possible…. Our first XPRIZE, the $10 million Ansari XPRIZE for private spaceflight, created exponential breakthroughs, spurring the commercial spaceflight industry, inspiring the launch of pioneering companies and household names such as Virgin Galactic, Blue Origin and SpaceX. Since then we have launched over $140 million in prize purses, including the $15 million Global Learning XPRIZE…*

Each of these prizes has created an industry-changing technology that brings us closer to a better, safer, more sustainable world."[420]

This is yet another way in which a stigmergic, self-organized hyperorganism leads in the direction of freedom. By crowdfunding creativity and creating other challenge forums, we deprive would-be tyrants and oligarchs of their paths to parasitic power.

We have only scratched the surface of the potential of stigmergy, and the above examples are but a few of the instantiations of this phenomenon. Later, for example, we'll see the potential for markets oriented towards other kinds of value, like accurate predictions which collectively minimize surprise. The goal of our metarevolution is to develop all of these self-organizing human systems (including but not limited to markets) to their full potential, and ultimately to intertwine these systems in the metasystem of our hyperorganism. Through the endlessly-scalable process of stigmergic self-organization, our hyperorganism will become more intelligent and better prepared to confront the challenges of life.

Francis Heylighen: *"To measure the intelligence of a distributed network, we can then try to establish its capacity to effectively process challenges. Normally, different agents have different skills in dealing with challenges. A complex challenge (say, global warming) has a large number of aspects that require different skills. The problem now is to distribute the different challenge aspects across the different agents so as to make sure the challenge as a whole is dealt with efficiently. This is the basic problem of coordination. It includes division of labor (who deals with what challenge component?), workflow (where does a challenge go after it has been partially dealt with?), and aggregation (how are all the finished pieces of work assembled?)."[421]*

Our metarevolution pictures a world which is complex, but does not overcomplicate things. Stigmergy and challenge propagation are perfect examples of how we can make our modes of action more complex, rather than more complicated. Remarkably simple mechanisms can produce amazing complexity and emergent patterns. These processes allow individuals to create complex systems which do not rely on centralized control, and achieve things none of them could alone. Adapting the universal coordinating mechanism of

stigmergy to human society is metarevolutionary because it helps form the cooperative, bottom-up structures from which further progress emerges.

We exist in complex systems, and the kinds of mediated coordination mechanisms explored here provide us our best chance at navigating that complexity. The mob boss or the totalitarian ruler may be able to coordinate activity, but the victory is pyrrhic, fragile, and ultimately short-lived.

The following sections will advance these ideas further. We will demonstrate a way forward which can both address our meaning crisis, and inform us on metarevolutionary principles which apply to any metacrisis.

2.1.7

PREDICTION

"So what does free energy bring to the table? If one assumes that the optimal policy performs a gradient ascent on value, then it is easy to show that value is inversely proportional to surprise."[422]

- Karl Friston

We could have discussed the process of prediction-making earlier, next to our considerations of cognition and sensation, but holding off on this key aspect of intelligence and survival lets us weave in the rest of the topics just discussed. We need to consider the ability of prediction at the scale of our hyperorganism. In so doing, we can find further applications of blockchain, stigmergy, and challenge propagation.

Metarevolutionaries care about good predictions, because bad ones haunt even the best-intentioned actions. This is made clear by the free-energy principle, which relies on sensing, thinking, predicting, and acting. Earlier sections attempted to show how we could translate some of these activities from the human level to the level of a hyperorganism. Through innovations in collective intelligence, a sense web, stigmergic self-organization, blockchain, and more, this vision is coming to life. But the FEP also requires prediction, which is the missing piece we will now turn our attention towards.

Karl Friston's free-energy principle is a lens which shows how brains, organisms, and all living systems have a mandate to fight against a natural tendency towards disorder. The more we are surprised by our environment, the less we have minimized free-energy.

Andy Clark: *"Reducing information-theoretic free-energy amounts to improving the world model so as to reduce prediction errors, hence reducing surprisal."*[423]

Karl Friston: *"This manifests as perception (so as to change predictions) or action (so as to change the sensations that are predicted)."*[424]

Ervin Laszlo: *"The more delicate organisms require advanced warning of threatening conditions and the skill to interpret the relevant sense signals. They must be able to predict to some extent what is likely to happen (as a rabbit can predict that he is likely to be attacked when he smells a fox), and see about taking preventive measures. We humans, more than any other organism, have greatly refined such predictive and interpretive skills."*[425]

In Information Theory, entropy is a measure of the total number of possible messages from a given source. And in the same sense, a message is high-entropy if it significantly narrows down the entropy of another message source. Friston's wisdom is that organisms and other systems survive and

thrive based on their ability to use their senses, actions, and internal mappings of reality to minimize how often they are surprised by the world around them.

Andy Clark: *"Brains, it has recently been argued, are essentially prediction machines. They are bundles of cells that support perception and action by constantly attempting to match incoming sensory inputs with top-down expectations or predictions. This is achieved using a hierarchical generative model that aims to minimize prediction error within a bidirectional cascade of cortical processing. Such accounts offer a unifying model of perception and action… Such formulations can arguably be used to display the prediction error minimization strategy as itself a consequence of a more fundamental mandate to minimize an information-theoretic isomorph of thermodynamic free-energy in a system's exchanges with the environment. Thermodynamic free-energy is a measure of the energy available to do useful work. Transposed to the cognitive/informational domain, it emerges as the difference between the way the world is represented as being, and the way it actually is. The better the fit, the lower the information-theoretic free-energy."*[426]

Therefore, we can see that good predictions are crucial for the existence of life itself. But, as we've discussed, sensing and predicting on the individual level is not quite the panacea it was in our ancestral environment. Metarevolution is oriented towards the complexification of our best individual abilities—such that we achieve equivalent qualities at the scale of our hyperorganism. The goal of our metarevolution is to achieve goals which fundamentally enable the achievement of further goals, thereby coming into closer contact with the Good. Thus, in this context, we can say quite simply that our goal is the maturation of our hyperorganism. This must include extending our individual senses, as we discussed, and also creating a prediction metasystem as part of our hyperorganism. These are the processes which allow a hyperorganism to "grow up".

Jeff Hawkins: *"Consider how we learn to read. The first thing we learn is to recognize individual printed letters. This is a slow and difficult task requiring conscious effort. Then we move on to recognizing simple words. Again, it is difficult and slow at first, even for three-letter words. The child can read each letter in sequence and sound out the letters one after another, but it*

takes a fair amount of practice before the word itself is recognized as a word. A young brain is slower to recognize inputs and slower to make motor commands because the memories used in these tasks are higher up the cortical hierarchy. Information has to flow all the way up and down, maybe with multiple passes, to resolve conflicts. It takes time for the neural signals to travel up and down the cortical hierarchy… A young brain also has not yet formed complex sequences at the top and therefore cannot recognize and play back complex patterns… If you study a particular set of objects over and over, your cortex re-forms memory representations for those objects down the hierarchy. This frees up the top for learning more subtle, more complex relationships."[427]

In other words, this kind of development at a global scale would make individuals more intelligent, because instead of just sending our signals "up the chain" (as in the typical government and corporate hierarchical structures) where decisions are then imposed top-down, the hyperorganism imagined here is simply the emergent entity of bottom-up self-organization. When we form this kind of whole with care and intentionality, the signal which flows up the levels of the holarchy become top-down predictions, which are very likely wise to follow, yet does not ultimately impose on the autonomy of other holons.

Such a situation makes individuals, and smaller social subsystems like towns and cities, more capable, better at resisting disorder in the face of an increasingly complex decision-space. Through our collective efforts, which can happen only when there is a coherent sense of We-ness and the game theoretic conditions for cooperation, we can become a hyperorganism with predictive capabilities far beyond any individual. Like the internet and other magnificent poolings of human spirit, the whole is greater than the sum of its parts, and at its best can be a superpower any person can access. And by helping us self-actualize and develop as individuals, a parallel exists in the earlier example of learning to read: Space at the higher levels (like the brain's cortex) of the holarchy is freed up, and can progressively handle more complex challenges. It means that at that collective level we can devote more of our attention to the Good.

By giving attention to those systems which sustain us, keep us from harm, and allow us to grow, a whole new world of opportunity blooms. But we have not yet given this goal an amount of our energy which is at all proportional to the amount used by the body for intelligence. So much of your body's daily caloric needs are based on powering the energy-demanding central nervous system. And the suggestion of this manifesto is that our emerging hyperorganism is currently underdeveloped and malnourished, and so cannot properly perform its scaled-up version of intelligence.

Jeff Hawkins: *"The brain uses vast amounts of memory to create a model of the world. Everything you know and have learned is stored in this model. The brain uses this memory-based model to make continuous predictions of future events. It is the ability to make predictions about the future that is the crux of intelligence."*[428]

Andy Clark: *"Action-oriented (hierarchical) predictive processing models promise to bring cognition, perception, action, and attention together within a common framework. This framework suggests probability-density distributions induced by hierarchical generative models as our basic means of representing the world, and prediction-error minimization as the driving force behind learning, action-selection, recognition, and inference."*[429]

Being a hyperorganism means that governments, economies, people, and the entire web of Earth's complex systems are altogether like a living entity, and must also fight the tendency towards disorder. A hyperorganism's intelligence, adaptability, and antifragility is at least partially determined by its mechanisms of collective free-energy minimization—which stem, like trunks and branches, from a root-like capacity to make good predictions.

Jeff Hawkins: *"The cortex is an organ of prediction. If we want to understand what intelligence is, what creativity is, how your brain works, and how to build intelligent machines, we must understand the nature of these predictions and how the cortex makes them."*[430]

These most-recent developments in brain technology built on our older "reptilian" brain structure in such a way that sensing the present environment was paired with the ability to use that input as the basis for predicting the future environment. This is a common pattern of metasystem transition—the systems it organizes continue their semi-autonomous

functions, yet become even more useful by serving a new, higher function for the whole metasystem.

Jeff Hawkins: *"We start with the reptilian brain with no cortex. Evolution discovers that if it tacks on a memory system (the neocortex) to the sensory path of the primitive brain, the animal gains an ability to predict the future… The neocortex stores this sensory information in its memory. At a future time when the animal encounters the same or a similar situation, the memory recognizes the input as similar and recalls what happened in the past. The recalled memory is compared with the sensory input stream. It both 'fills in' the current input and predicts what will be seen next. By comparing the actual sensory input with recalled memory, the animal not only understands where it is but can see into the future… Thus, memory and prediction allow an animal to use its existing (old brain) behaviors more intelligently."*[431]

Metarevolutionaries must work towards these same prediction-related goals. We are always oriented towards a metacrisis, instead of individual crises. And part of that orientation involves finding ways to become better problem-solvers before we actually try to solve problems. A scaling-up of the powers of prediction is a necessary step in the development of our hyperorganism. A hyperorganism has many of the same imperatives as an individual organism, and the design of any new systems should reflect that.

New incentives are needed in order to put the predictive component of free-energy minimization at the top of our collective to-do list. In other words, how can we organize ourselves around the metasystemic goal of minimizing surprise and maximizing value in a way that is compatible with the individual incentives of subsystems?

Ervin Laszlo: *"Like all complex natural systems, human institutions and societies function best when they are spontaneous expressions of the freely chosen activities of their interrelated members."*[432]

What systems need to be in place such that people are freely pursuing a self-assertive goal of having a good life, which nevertheless creates the emergent properties we seek at the collective level of a hyperorganism? One possibility is some kind of "prediction market". Robin Hanson developed the

concept in the late 1980s, variously calling it by the name above or else an "information market" or "Idea Futures".

Robin Hanson: *"Markets are a way to create a consensus about the value of an ownable item, i.e., the 'price'. Futures markets are a way to create an immediate consensus about future consensus. For example, a market in corn creates a price in corn, so that most buyers pay about that price. A futures market in corn creates a futures price, which is an immediate estimate of what the actual price of corn will be in, say, nine months. Traders have clear incentives to make honest contributions to the consensus; you 'put your money where your mouth is'. A trader who believes the future price will be higher than the market indicates buys, and in so doing raises the consensus price. Those who are right make money from those who are wrong… Idea Futures is intended to aid the evolution of a wide range of ideas, from public policy to the nature of the universe, and in particular should be able to help us predict and understand our future. The basic concept is to combine two phenomena, convergence and markets, and so make 'a futures market in ideas'… like corn futures markets except you'd bet on the future settlement of a scientific controversy instead of the future price of corn."*[433]

This is a system of emergent leadership. If you can make good predictions, not only will you be personally rewarded—you will be shaping the future in such a way that rewards the entire world. The metarevolutionary world of self-organizing systems and metasystems is more free than any alternative, because it creates harmony between actions which are self-actualizing and self-transcending—between individual and community.

It is not just organisms which need good predictions. This need applies to organizations and cities and countries and our hyperorganism. We owe it to ourselves to make the best decisions we can with the information available to us. Just like our "sense web" will be a metasystem of perceptive agents, human and nonhuman, and be capable of integrating sensations into a coherent whole, prediction markets will expand our collective ability to peek into the future. In many cases, it will be a superior way to balance and channel our desires and values—as compared with methods such as debating or voting.

Thomas Malone: *"Counting votes is a fairly simple way of combining people's opinions, but some of the most interesting examples of*

*what you might call democratic truth finding involve more than just voting;
they rely on more sophisticated ways of combining opinions. For instance, the
Good Judgment Project…was part of a competition organized…to develop
innovative methods for predicting the answers to a wide range of questions
about geopolitical events… In each case, the groups didn't make simple yes-
or-no predictions. Instead they tried to estimate the probability of the events
occurring. New questions usually had end dates several months in the future,
and groups were able to update their predictions every day until the end
date."*[434]

Malone further describes his own experimentation in prediction
markets, using the example of predicting plays in football.

Thomas Malone: *"We showed groups of people videos of a football
game, and just before each play began, we stopped the videos and asked
people to predict whether the play would be a run or a pass. Rather than
asking our subjects to just make a simple prediction, we asked them to express
their predictions by participating in a prediction market. Somewhat like
futures markets, prediction markets let you buy and sell 'shares' of predictions
about possible future events. For instance, if you think the next play will very
likely be a pass, you should buy shares of this prediction. If your predictions
are right, then you (typically) get one dollar for each share you own, and if
your predictions are wrong you get nothing… But the market lets you express
your opinions even more precisely than that. If you think, for instance, that the
probability of a pass is 60 percent, then you should be willing to buy a pass
prediction for anything up to 60 cents, and you should be willing to sell one
for anything over 60 cents. That means the resulting price in the overall
market is essentially an estimate of the probability of a pass play based on the
collective opinion of all the people participating in the market."*[435]

Many will hear the word "market" and recoil reflexively, because
financial markets have played a role in compressing a complex set of human
values into the overly-narrow value metric of GDP. But the orientation of
markets towards answering the question of at-the-moment value of goods and
service is hardly the only thing a stigmergic, self-organizing complex system
can do. Here, instead, we can see that a prediction market serves our
metarevolutionary goals by helping us collectively minimize free-energy—

meaning whatever kind of value we orient ourselves towards, our aspirations will be more fundamentally within reach. If life is a struggle against disorder, then by committing ourselves to upholding systems of collective prediction, we afford ourselves the gift of open-ended possibility—as in, life itself.

Moreover, it is incentive compatible: A person participating in a prediction market does not need to understand the entirety of the global system, or even be oriented towards some "greater good". We can safely presume that prediction agents will be self-interested, hoping to profit from the market. Yet, the emergent result is exactly the collective free-energy minimization we seek. Societies, rather than relying on any kind of centralized pricing mechanism, can use this process to answer important questions about the true cost of goods, services, and actions in general. From the individual perspective, it is incentive compatible because you are rewarded for accurate predictions. And from the whole system perspective it is highly desirable, because the emergent result is an accurate prediction mechanism for markets, governments, and other self-organizing systems which currently tend to externalize these costs.

Robin Hanson: *"Prediction markets are a meta-institution, able to improve the selection of other institutions… To make use of speculative markets, we can 'vote on values, but bet on beliefs.' We now use democracy both to decide what we want, and to decide how to get what we want. We might instead still have democracy say want we want, but let speculative markets say how to get what we want."*[436]

Our metarevolution seeks to merge this idea with our sense web, blockchain-related technologies, challenge propagation, and the many systems which compose our hyperorganism. And we can use this distributed, decentralized, collectively-intelligent network as a much-needed upgrade to our governments and organizations. This means that static top-down hierarchies will be replaced by dynamic Janus-facing holarchies.

Certain "superpredictors" could have a lot of power in this future, but it will be a function of their positive contributions to society, not of some unfair factor like the wealth of the family they were born into. The only alternative is a world bereft of insight and an unending, increasingly horrific metacrisis.

Ervin Laszlo: *"Such insight (and the will to act on it) is mostly missing; even in this day and age the rule in both the private sector of business and the public sector of government is 'crisis management' instead of anticipatory planning and preventive self-transformation."*[437]

The power of good predictions is essentially the same as knowing what to pay attention to. So if a superorganism as a whole can be greater than the sum of its parts, then by forming this new metasystem we can amplify our individual predictive capacity, and thus gain a more finely-tuned power of attention which brings us closer to a good society.

Francis Heylighen: *"We will define intelligence as the ability to process information so as to efficiently solve problems and exploit opportunities. What are considered problems, opportunities— or more generally challenges—will depend on the goals and values of the decision-maker, who can be an individual, an organization, or a superorganism. Efficiently dealing with a challenge means selecting and performing the right actions that solve the problem or exploit the opportunity… The view of intelligence as a capability for problem solving or information processing runs into a fundamental issue: what is a meaningful problem, or meaningful information? Why should an intelligent agent address certain problems or process certain information, and disregard others? In other words, how does an agent decide what to do or pay attention to? In the approach of traditional artificial intelligence (AI), this issue is ignored, as AI programs are conceived essentially as question-answering systems: the user or programmer introduces the question (problem, query, input), and the program responds with an answer (solution, output). On the other hand, the issue becomes inevitable once you start to design autonomous systems, i.e. systems that should be able to act intelligently in the absence of an instructor telling them what to do. Such a system should at least have a value system, i.e. a set of explicit or implicit criteria that allow it distinguish 'good' outcomes from 'bad' ones. Given the ability to evaluate or value phenomena, the agent can then itself decide what aspects of its situation are 'problematic' and therefore require some solution."*[438]

As a hyperorganism, prediction-making will be a necessary task, but needs to be paired with attention-directing and the generation of shared

meaning and values, which takes the form of the challenge propagation system we discussed.

Francis Heylighen: *"However, acting autonomously is more than solving problems. A situation does not need to be 'bad' in order to make the agent act. When you take a walk, draw something on a piece of paper, or chat with friends, you are not solving the problem of being 'walkless', 'drawingless', or 'chatless'. Still, you are following an implicit value system that tells you that it is good to exercise, to play, to be creative, to see things, to build social connections, to hear what others are doing, etc. These kinds of values are positive, in the sense that they make you progress, develop, or 'grow' beyond what you have now, albeit without any clear goal or end point. Maslow in his theory of motivation called such values 'growth needs'. Problems, on the other hand, are defined negatively, as the fact that some aspiration or need is not fulfilled. With such 'deficiency' needs, once the goal is achieved, the problem is solved, and the motivation to act disappears."*[439]

Every parent faces it—the day their child asks: *"How does a hyperorganism know what to pay attention to?"* It is one of the toughest questions parents face, but now we finally have a satisfying answer:

"You see", you say to the child, *"the hyperorganism has a worldview, which is a collection of stories, values, and other criteria that provide a basis for meaningful and internally coherent action. There is something in this worldview called the Good, and the hyperorganism's goal or attractor state is the perfection of the Value and Action relationship implied by this metaphysical first principle. If successful, it will be able to continually create a more perfect version of itself. To do this is a matter of attention and prediction. Here's why: Let's say you want a cookie, because of course you do. You are a child and your worldview tells you that the Good is nothing more than a chocolate-chip cookie, so when your brain engages in free-energy minimization, it is trying to maximize value as you understand it, and avoid the surprising and unpleasant state of being cookieless. Therefore, you will subconsciously be making predictions about things such as what actions you can take that will most likely result in you being full of cookies."*

"Cookies!" says the child.

"Yes, but what you might not realize is that the same prediction-driven feedback loops can also modify your understanding of value. Right now, you are at the age where you've predicted that what is most-correlated with the Good is cookies. But what if you tried to predict something that could exceed the value of cookies rather than just trying to maximize your current supply of them? Predictions, actions, and perceptions are all interacting engines which power personal transformation. These transformations change the focus of our desires and attention—and our desires and attention further transform us. Generally speaking, we pay attention to things because we predict that there is value in paying attention to that thing—which is nothing more than saying that to be alive is to distinguish between signal and noise. A hyperorganism does this by embodying a scaling-up of individual predictors like you into a prediction metasystem or 'prediction market'. And that's how the hyperorganism can continually learn what to pay attention to rather than just being a cookie maximizer."

Now let's imagine what a challenge-prediction metasystem would look like. A firsthand point-of-view: Donnie lives in Poughkeepsie, New York. Human beings like Donnie are self-organizing, complex adaptive systems which minimize free-energy in order to counter the universal tendency towards disorder. He uses his senses to understand his complex environment and achieve his complex goals. He processes this sensory information in a strange loop called "consciousness" and makes predictions about future sensory states he is likely to encounter. He takes actions which he predicts will bring his present reality closer to his ideal reality, and then senses and processes the results so the cycle can continue. The divide between what is expected in Donnie's internal milieu and what is actually going on in his external milieu is his Markov blanket, and closing the difference between the two is the minimization of surprisal.

One day, Donnie reads an interesting book called *"A Metarevolutionary Manifesto"*, and learns that there is a hyperorganism, which is kind of like a Donnie made of Donnies, which needs to fight against disorder just like him. He realizes this is the justification for the "prediction market" he's heard about. He thought it was just some way for people to gamble.

He decides to look into it. It turns out, there are people who spend a great deal of their time making bets on this prediction market. Some are known as "superforecasters" and are making an exceptional amount of money. And these aren't just horse races! Donnie learns that governments, including his own, are actually basing policy decisions on the collective intelligence of prediction markets.

Donnie spends the next few days immersed in the world of forecasting. He bets that Policy X will create more good than Policy Y. He bets on the outcome of the truthfulness of Statement Z. He wins and he loses, and yet there is an overall positive feeling because the collective outcomes of good predictions are good for him, even if he placed a losing bet. The joy is not so much from winning in the finite sense, but in helping to create the conditions for the game of life to go on infinitely.

He gets a little deeper into how the whole prediction process works. Aside from people like Donnie who place bets on the prediction market, there is an adjacent ecosystem of NFTs, which he understands are like property deeds for ideas. When someone thinks they have a good idea, they create an NFT and upload it into this idea ecosystem. The NFT is a marker left by an agent in a medium which stimulates further action from other agents—human stigmergy. The hope of a creator is that their NFT will attract the attention of the prediction market—as in, that it will be predicted that the idea, if enacted, would bring us closer to a good society. If it is so predicted, the NFT will become extremely valuable, because to instantiate the idea is to "license" it from its creator, which means paying royalties.

Now, that's just at the Donnie-level. But we might take this all a step further by considering that the agent making predictions need not be an individual like Donnie at all. In fact, it may turn out that predictive swarms outperform even the best individual superforecasters.

Metcalf, Askay & Rosenberg: *"Schools of fish, flocks of birds, colonies of ants, and swarms of bees exhibit collective intelligence, in that they are capable of making decisions that extend beyond the knowledge of individuals in the group. As they confront known unknowns (e.g., where to find food or where to locate a hive), individuals within the group base their decisions on self-organized local interactions with group members. The kind*

of self-organization enabled by these multi-agent systems—whether they are composed of bees, ants, or fish—enables the swarm to amplify intelligence and to suppress errors, while collaborating to converge upon solutions."[440]

Rosenberg, Pescetelli & Willcox: *"Flocking birds detect subtle motions propagating through the population. Swarming bees use complex body vibrations called a 'waggle dance.' To enable real-time swarming among groups of networked humans, specialized user interfaces, intelligence algorithms, and networking paradigms are required to close the loop among all members… To address this need, [Artificial Swarm Intelligence or ASI] was developed to enable human groups to congregate online as real-time swarms, connecting synchronously from anywhere in the world."*[441]

Metcalf, Askay & Rosenberg: *"The improved performance that arises from distributed, self-organized decision making is defined as swarm intelligence… [ASI] draws from the methods of achieving collective intelligence found in biological swarms to enable human groups to form a single emergent intelligence. ASI provides the means for networked individuals to combine their explicit and tacit knowledge in real time and to work synchronously to make predictions, to assess alternatives, and to reach decisions about known unknowns. When enabled by ASI, human swarms form a collectively intelligent system that can outperform traditional methods of dealing with known unknowns."*[442]

Rosenberg, Pescetelli & Willcox: *"[One study, for example,] showed that individual participants, who averaged 61% accuracy when predicting weekly trends on their own, amplified their accuracy to 77% when predicting together as real-time swarms. These results reflect a 26% increase in financial prediction accuracy and show high statistical significance. This suggests that enabling groups of traders to form real-time systems online, governed by swarm intelligence algorithms, has the potential to significantly increase the accuracy of financial forecasts."*[443]

Good predictions lead to good futures, and we're on our way to both right now. Prediction-making is an important and fundamental measure of intelligence, adaptability, and survivability—whether the agent in question is a person or a hyperorganism.

We need to scale up prediction-making just like we did with a web of senses. The scaling up must happen through stigmergy and challenge propagation—i.e. with systems like prediction markets which orient us around collective goals while leaving our individual autonomy intact. As an arena of action, it should be incentive compatible—with people participating in it because they want to, and that participation leading to desirable outcomes from the perspective of our hyperorganism.

For similar reasons, systems like prediction markets should be owned and operated through DLT (such as blockchain and Ethereum) and therefore permanently remain in the hands of real people, and never succumbing to the centralizing Kronos-like tendency of the ICT "Cycle". Further, it should be tightly integrated with everything else we explored: forms of collective intelligence such as swarming, a rapidly expanding Internet of Things and Internet of Senses, and the decentralized trust enabled by blockchain.

Thus, we have reached the point of describing how action-complexity can scale up to meet the demands of our metacrisis. What we have yet to explore is how we can properly orient that action. This brings us back into the domain of games and play, and also, later, the transformation of those who play these most-important games.

2.1.8

ACTION

"The root meaning of citizen in both Greek and Latin is 'he who is summoned'."[444]

- Geoffrey Parker

Monads, as the quanta of value-in-action, are the primary citizens of the universe—summoned by the Good to do great things in an endless pursuit of perfection.

We've been seeking ways to "scale up" and harness the power of an individual-of-individuals called a hyperorganism, which is the emergent property of a monadic plenum whose tendency is complexification and the expansion of consciousness. Inevitably, then, we return to game theory, which is the study of the choices and interactions of action-centers, and applies to monads, organisms, superorganisms, and hyperorganisms alike.

We must apply a similar scaling-up to this subject—considering not just games, but hypergames. A hyperorganism is to monads, organisms, and superorganisms what a hypergame is to a game: The initial or current "state" represents a choice between all the possible states, which is the collection of all games. The hyperorganism's choice of game within our universe's hypergame is the universal condition of all other actions. Thus we will explore a few levels (or orders) of hypergames.

We've said that our individual-of-individuals embodies many systems and metasystems, such as those relating to collective intelligence. Our hyperorganism also embodies game dynamics, and we should assume that our metacrisis will only get worse if this particular domain doesn't receive proper attention. That's because game theory contains lessons about Action, and how interaction plays out when many action-centers coexist.

While exploring games in the first half of the book, we encountered ideas such as incentives, traps, and attractor states. We can now return to these considerations and present a way forward in the context of our hyperorganism. In other words, all of these developments happening within our hyperorganism must also include an overcoming of maladaptive patterns such as free-riding or multipolar traps.

One of the most vexing, archetypal attractor states in any game containing numerous action-centers is a style of play which seems nearly harmless on a small scale, but is utterly destructive if the strategy propagates through the whole system of players. Usually it involves a self-centered action in place of the other-centered action which, over the long-term, is required for the system in which the individual finds himself to maintain itself. This

extremely general pattern plays out in many ways, and has been given many names depending on the context, including: the free-rider problem, the Tragedy of the Commons, multipolar traps, Moloch, non-optimal Nash equilibria, negative attractor states, and finite play.

On the other hand, there is a style of play which seems nearly insignificant on a small scale, but is utterly decisive if the strategy propagates through the whole system of players. Usually it involves a self-sacrificing action in place of an other-sacrificing action which, over the long-term, is required for the system in which the individual finds himself to perfect itself. This extremely general pattern plays out in many ways, and has been given many names depending on the context, including: the Golden Rule, superrationality, the categorical imperative, obedience, freedom, love, optimal Nash Equilibrium, positive attractor states, and infinite play.

The question now is how to bring about the latter of these when we are immersed in the former. So let us explore how the evolution of our hyperorganism coincides with this movement, beginning with an allegory.

In a fictitious scene in 17th-century France, a young Blaise Pascal is at a pub with friends, a group of college-age men. A few women across the room catch their attention, and the guys all seem particularly interested in the singular blonde of the group. One of Blaise's friends posits that, in the spirit of philosopher Epicurus, actions in our own self-interest do not matter to whatever gods may or may not exist, and there is certainly no eternal afterlife where we are judged for those actions. They should all pursue life in a hedonistic, epicurean fashion—as if there is no God.

It's in this moment that Blaise has a revelation: *Epicurus was wrong.* The group might achieve a better outcome following his friend's prompt, if indeed God does not exist, but the payoff would be finite. You might live a very good life on Earth, but you are still faced with the possibility that God was watching the whole time, and that the infinite punishment of Hell or the infinite payoff of Heaven should have been the main factors in how you lived. This concept is known as "Pascal's Wager".[445]

Douglas Hofstadter: *"In fact, Pascal felt, even if the chances of God's existence were one in a million, faith in that God would pay off in the end, because the potential rewards (or punishments) if Heaven and Hell exist*

are infinite, and all earthly rewards and punishments, no matter how great, are still finite."[446]

Pascal's Wager	God exists	God doesn't exist
Have faith In God	P = +∞	P = -**X**
Reject God	P = -∞	P = +**X**

Unlike the Prisoner's Dilemma, where the point of equilibrium is mutual defection and results in a race to the bottom, Blaise's attempt to win a game against God seems to have the opposite effect. The prisoners are only caught in their everlasting trap due to the unique payoff matrix of that game. Other games like the Stag Hunt have multiple points of equilibrium, and even the Prisoner's Dilemma in its multiple-round version leads to dominance of the conditional cooperation (tit-for-tat) strategy over pure selfishness.

Sometimes the rules of the game are written in advance. But we are just as often game designers as we are game players. We can do more than understand our world—we can change it. Pascal's Wager gives us initial clues about "mechanism design", which is also called "reverse game theory", or else its "engineering" branch. To design a mechanism, in this sense, is to create new games, change one or more aspects of a game, or even to create perceptual changes in others, as Pascal attempted to do. Subjective, perceptual understanding of a game is always an actual part of playing that game.

Noam Nisan: *"Mechanism design is a sub-field of game theory."*[447]

Eric Maskin: *"One starts with a particular goal or objective and then enquires if and how a mechanism—that is, a game—could be designed that attains that goal in equilibrium."*[448]

Noam Nisan: *"[Yes, so our goal would be to] design games whose equilibria have desired properties such as achieving high efficiency or high revenue."*[449]

This, as Ostrom says, opens possibilities for us far beyond the binary choice within the Prisoner's Dilemma.

Elinor Ostrom: *"The prisoners in the famous dilemma cannot change the constraints imposed on them by the district attorney; they are in jail. Not all users of natural resources are similarly incapable of changing their constraints. As long as individuals are viewed as prisoners, policy prescriptions will address this metaphor. I would rather address the question of how to enhance the capabilities of those involved to change the constraining rules of the game to lead to outcomes other than remorseless tragedies."*[450]

Effective social, economic, and governmental systems must place the proper values within the payoff matrices which incentivize behaviors and drive the emergence of global patterns. We are racing to the bottom, which is not so different from the "damnation and eternal misery" (infinite loss) in Pascal's Wager. Part of our current task is to transform the landscape of incentives and affordances which shape our interactions.

Hell is Earth without God or Good. And we don't have to argue over the existence of either in this case, because the effects of making the wrong choice in a Pascalian wager on either is self-evident through our growing intimacy with an all-consuming metacrisis. We all see it: a dying ecosystem, a collapse of trust and cooperation, and a poverty of meaning.

It is clear that we must find new games to play and new ways of playing them. And the place of salvation we must steer towards is our own metamodern version of what could be called a Pascalian Equilibrium—a state of gameplay in which mutual cooperation achieved by appealing to our potential to either gain or lose all that is possible because of the Good—that irresistibly beautiful absolute perfection.

To that end, we can now pick up our earlier discussion on the evolution of cooperation. On the road to a more developed hyperorganism, there are opportunities for both competition and cooperation, and both are beneficial in the right contexts. What plagues us now is the whirlpool-like

attractor state of mutual defection—that pattern which keeps us from cooperating even when it is clearly desirable from all perspectives. Douglas Hofstadter recalls Robert Axelrod's work on cooperation, and reminds us of three relevant questions.

Douglas Hofstadter: *"How can it all get started? Can cooperative strategies survive better than their noncooperative rivals? Which cooperative strategies will do the best, and how will they come to predominate?"*[451]

In other words, for all this talk about making a better world, that talk is empty if it is not simultaneously embodied in an evolutionarily stable strategy (ESS). We will address these questions while keeping in mind how this all connects with the other threads which altogether compose our hyperorganism. If other developments continue without addressing fundamental concerns about action (and arenas of interaction we call "games"), then it would not be exaggerating to say that our hyperorganism would be at war with itself. Just as a "global brain" is not necessarily good if it is not built through the decentralized technology we discussed, having more actions to choose from does not necessarily lead to better interactions. Instead, we must take on all of these challenges as parts of one coherent whole.

The road to better economic gameplay is also something Elinor Ostrom explores throughout her work, and her insights will bolster what we've so far learned from Pascal. Ostrom was particularly focused on how a population of people (or the whole planet) could relate to their environment, manage resources, and overcome negative incentives (such as the short-term gains of resource over-extraction).

Three broad categories of economic paradigms are presented throughout her work. The first two will likely be the most familiar to readers: centralization and privatization. Both are classes of solutions to the game theoretic trap known as the "tragedy of the commons". A centralized authority can monitor and referee the game to theoretically ensure fairness. This can be seen through the Prisoner's Dilemma game-changers in Axelrod's work—listed here again but with the "solutions" provided by centralization:

1. Enforceable threats: A central authority, like a federal government which controls a powerful military, has the means to make enforceable threats to non-cooperating players.

2. Coordination: The traditional dilemma involves the assumption that the prisoners cannot coordinate their actions, but a centralized power can create enforceable contracts for the players which change the conditions that lead to inferior equilibriums.

3. Kill the other player or run away: A sufficiently powerful central authority can theoretically remove players from the game by force, or otherwise exercise strategies which don't follow the presumed rules of the game.

4. Change the payoff values: Centralization of power means the ability to redesign games by changing the rewards or penalties associated with different actions.[452]

Now is not the time to linger on this subject. It should suffice to say that a plausible argument can be made for centralization, but it is hardly the ideal solution. Likewise, proponents of privatization could see their solutions fitting these same roles:

1. Enforceable threats: By doing away with common goods and enacting private property rights for these resources, there would be no commons to act as an attractor of tragedies. Private owners would simply find ways to make enforceable threats to deter theft of their property.

2. Coordination: Contracts, trade agreements, taxes, sanctions, and a free market could be sufficient coordination to lead self-interested players towards a cooperative equilibrium.

3. Kill the other player or run away: Trespassers will be shot.

4. Change the payoff values: Similar to coordination, wherein self-interested property owners could change the payoffs associated with an equilibrium of defection or cooperation in order to make the more profitable cooperative strategy the Nash Equilibrium of the new game.[453]

Elinor Ostrom reflects on these two modes throughout her work. Her deepest-cutting critique of both is that they invoke extrinsic pools of power which act upon the individual.

Elinor Ostrom: *"One set of advocates presumes that a central authority must assume continuing responsibility to make unitary decisions for*

a particular resource. The other presumes that a central authority should parcel out ownership rights to the resource and then allow individuals to pursue their own self-interests within a set of well-defined property rights. Both centralization advocates and privatization advocates accept as a central tenet that institutional change must come from outside and be imposed on the individuals affected. Despite sharing a faith in the necessity and efficacy of 'the state' to change institutions so as to increase efficiency, the institutional changes they recommend could hardly be further apart."[454]

So, different as privatization and centralization are, Ostrom correctly diagnoses both as asymmetric power-relations. Being satisfied with neither option, she introduces self-organization as a third mechanism for governing the commons (also called "common pool resources" or CPRs). Unlike the other two methods, self-governance of the commons is a way to overcome traps (or tragedies) without an external power. It is an emergent network of power-sharing. She illustrates this with a real-world example.

Elinor Ostrom: *"Let us now briefly consider a solution devised by participants in a field setting—Alanya, Turkey—that cannot be characterized as either central regulation or privatization... The economic viability of the fishery was threatened by two factors: First, unrestrained use of the fishery had led to hostility and, at times, violent conflict among the users. Second, competition among fishers for the better fishing spots had increased production costs, as well as the level of uncertainty regarding the harvest potential of any particular boat."*[455]

Economic viability of this fishery, from the human perspective, and a healthy ecosystem, from a fish's perspective, are both threatened when no means of governing the commons are in place. This is where societies have generally implemented either centralization or privatization in order to halt an otherwise catastrophic race to the bottom. But in the case of this Turkish community, Ostrom found that they had created a stable system based on reciprocity and self-organization.

Elinor Ostrom: *"Early in the 1970s, members of the local cooperative began experimenting with an ingenious system for allotting fishing sites to local fishers... A list of eligible fishers is prepared, consisting of all licensed fishers in Alanya... Within the area normally used by Alanya*

fishers, all usable fishing locations are named and listed… The eligible fishers draw lots and are assigned to the named fishing locations. From September to January, each day each fisher moves east to the next location. After January, the fishers move west. This gives the fishers equal opportunities at the stocks that migrate… The process of monitoring and enforcing the system is… accomplished by the fishers themselves as a by-product of the incentive created by the rotation system. On a day when a given fisher is assigned one of the more productive spots, that fisher will exercise that option with certainty… All other fishers can expect that the assigned fisher will be at the spot bright and early. Consequently, an effort to cheat on the system by traveling to a good spot on a day when one is assigned to a poor spot has little chance of remaining undetected… Their rights will be supported by everyone else in the system. The others will want to ensure that their own rights will not be usurped on the days when they are assigned good sites… Alanya provides an example of a self-governed common-property arrangement in which the rules have been devised and modified by the participants themselves and also are monitored and enforced by them."[456]

Taken all together, our metarevolution rejects dogmatic views of all-private or all-national institutions. It takes its inspiration instead from the self-organization of nature and concludes that, given certain conditions, society's stakeholders can self-govern the commons. And such a world can be reached even from our present state of myopic self-centeredness. Axelrod condenses all of this into a single, dense dictum which all nascent mechanism designers should study.

Robert Axelrod: *"Mutual cooperation can emerge in a world of egoists without central control, by starting with a cluster of individuals who rely on reciprocity."*[457]

The approach of our metarevolution is to couple the idea of self-organized governance of CPRs with the requisite technology of cooperation. Never before have we had such a clear picture of evolutionarily stable cooperation alongside technology like blockchain, artificial intelligence, and IoT. The task is still a daunting one, but we have a clear map and at least the rough building-blocks of the corresponding territory. Ethereum, for instance, would allow us to turn Ostrom's eight design principles for the self-organized

governance of the commons into smart contracts and DAOs. David Dao, with the perfect name for the job, suggests how Ostrom may live on in the blockchain—shown in the chart on the following page.[458]

At this point, though, you're probably wondering: *"Yes, but where is God in all this?"* Or maybe you are not wondering that. But let's address this either way. The unlikely pair of Pascal and Ostrom provide the foundation we need. Three of the core problems for effective governance of the commons, as stated by Ostrom, are *"supplying a new set of institutions, making credible commitments, and mutual monitoring"*.[459]

If a society wishes to avoid a tragedy of the commons, how can it establish credible commitments and monitor activity well enough to deter defection? The answer for most of history has, in fact, been God. If you can establish a sufficiently strong and pervasive belief that there is an all-powerful monitor-God, then players in a Pascal's Wager-style game have a different equilibrium than those in a Prisoner's Dilemma.

Howard Bloom: *"Take for example religious memes that include the notion of Hell. Anyone who doesn't bite the hook enthusiastically is guaranteed a dire fate indeed… The meme, whether Christian or Muslim, comes complete with vivid images of an infinite skillet in which the unwise will sauté for infinity."[460]*

In societies, ancient and contemporary, it is generally costly to have humans as monitors and enforcers of "bad" actions which threaten the existence of the society. With God, however, you get nearly-costless monitoring via omnipresence, and credible commitments from every believer because defecting means going to Hell. The game of Pascal's Wager may in some sense produce a cooperative equilibrium, but it rests on the perceived existence of God and the fear of eternal punishment—not unlike the Hobbesian justification for a Leviathan-like human society.

Wolfgang Palaver: *"Hobbes…argues that all contracts are fragile and unstable on account of man's warlike nature, where there is no central governing power. In Hobbes's universe, all contracts agreed upon without the sword are reduced to empty words. How, in such a situation of crisis, can a binding agreement be reached to establish the authority that will render all*

future contracts stable? Hobbes…invokes the fear of God, which he sees as the only feasible form of stability for humans in their natural state."[461]

Smart Contracts
for decentralized self-governance
of the commons

Ostrom's Design Principles	Ostrom Contracts
Define clear group boundaries	Token-based membership
Match rules governing use of the common goods to local needs and conditions	Rules determined via blockchain governance
Ensure that those affected by the rules can participate in modifying the rules	Proposal system for members
Develop a system, carried out by community members, for monitoring members' behavior	Machine learning and monitoring
Use graduated sanctions for rule violators	Graduated stakes for rules violation
Provide accessible, low-cost means for dispute resolution	Challenge response game for dispute resolution
Make sure the rule-making rights of community members are respected by outside authorities	Censorship resistance through decentralization
Build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system	Hierarchal nested contracts

Credit: David Dao

It's time to synthesize these views and understand both the usefulness and unpleasant undesirability of Pascal's Wager. We can now design a game without complete centralization or privatization, and without God. Instead, we should strive to create conditions for the self-organized evolution of stable cooperation—the kind which does not rely on any kind of extreme centralization of power or authoritarian coercion.

The next attempt at evolving a state of mutual cooperation and prosocial behavior comes from the tradition of Reason which can hardly be summed up better than through Kant's categorical imperative.

Immanuel Kant: *"I ought never to act except in such a way that I could also will that my maxim should become a universal law."462*

For Pascal, the way to bring out the best in humanity was God. For rationalists, the best way is reason. A more contemporary take is "superrationality". In short, through standard decision theory and a single-shot Prisoner's Dilemma, there is a "rational" choice of defection because it maximizes one's expected payoff. This is because part of the assumed constraints of that game are that the prisoners can't communicate and do not know how the other will act. This all relies on an agent assuming that they exist as a "particle" in a "field" of other rational agents who will act similarly. In juxtaposition, it is suggested that a world of superrational prisoners could exist. In that world, there is still no coordination between the prisoners, but because they are superrational, they go through a different counterfactual deliberation than their rational counterparts.

In the superrational world, one does not think: *"The other prisoner will defect, so I also have to defect"*. Instead, they will think: *"Both of us know that we will be worse off if we defect, and I know we will both arrive at the same conclusion, so I will cooperate because I predict you will cooperate, having reached the same conclusion as me."*

Douglas Hofstadter: *"On a small scale, we are constantly faced with dilemmas like the Prisoner's Dilemma, where personal greed conflicts with social gain. For any two persons, the dilemma is virtually identical. What would be sane behavior in such situations?... You need to depend not just on their being rational, but on their depending on everyone else to be rational, and on their depending on everyone to depend on everyone to be rational—*

and so on. A group of reasoners in this relationship to each other I call superrational. Superrational thinkers, by recursive definition, include in their calculations the fact that they are in a group of superrational thinkers."[463]

This is another step in the right direction, but it is incomplete on its own. If one could, through sheer will, make everyone switch to superrational strategies all at once, it is easy to see that the world would be a better place. Hofstadter is convinced that superrationality will *"come to dominate among intelligent beings in the universe"*,[464] but the question of how to get from here to there remains open.

Human and technological evolution are finally bringing alternatives to the Hobbesian paradigm into sight. Stigmergic, self-organized governance by a non-God-fearing population is now the best way forward. As stakeholders in the systems, institutions, and infrastructure of the future, we can self-manage our way out of our present vortex of game theoretic traps. Part of what we need is God-obsoleting technology like Smart Contracts.

Self-organization defies the binary of centralization-privatization: order, authority, commitment, monitoring, and cooperation can emerge from the bottom-up. Thus we can obsolete the external coercion that Ostrom says is *"a frequently cited theoretical solution to the problem of commitment."[465]* Instead, self-organization is a rather benign mutual-coercion, in the spirit of Garrett Hardin, who popularized the term "tragedy of the commons".

Garrett Hardin: *"To many, the word coercion implies arbitrary decisions of distant and irresponsible bureaucrats; but this is not a necessary part of its meaning. The only kind of coercion I recommend is mutual coercion, mutually agreed upon by the majority of the people affected. To say that we mutually agree to coercion is not to say that we are required to enjoy it, or even to pretend we enjoy it. Who enjoys taxes? We all grumble about them. But we accept compulsory taxes because we recognize that voluntary taxes would favor the conscienceless. We institute and (grumblingly) support taxes and other coercive devices to escape the horror of the commons."[466]*

Perhaps there's no kind of coercion that sounds appealing, but the coercion of external authority, whether governments or corporations or God, is fragile, because this power is susceptible to capture. The alternative, found in a self-organized hyperorganism, is less easily bought, bastardized, or

zealotized. And in the absence of this third option of self-organization, we are stuck playing a game we hate—a game fueled by violence and destined for catastrophic collapse.

Now, we have shown that there are different traps, affordances, and incentive landscapes built into every game we play. All of this, however, must finally be brought together into a theory of a "hypergame" which includes and transcends all other games.

A hypergame, most generally, is a metasystem of games in which playing is, foremost, the act of choosing between possible games. This can be understood in a few ways, which for our present discussion will be called first, second, and third-order hypergames.

A first-order hypergame is cosmogonic, or, in other words, an actualization of a universe out of all the physically and metaphysically possible universes. This has sometimes been taken as "God's choice" of possible universes—as with Leibniz who extended this to the idea that God, with infinite love and wisdom, must have chosen to create the best universe. We understand it agnostically as the proposition that the Good is the first principle of everything; that its actualization through Action is the condition of all conditions; and that the purpose of the hypergame in which we find ourselves is to play our part, lovingly, in the unfolding actuality of Value and Action.

A second-order hypergame might also be called an iterated supergame, in which each round begins with an action-center's choice from all games which are possible given the conditions set by a first-order hypergame. Metagaming may proceed indefinitely from here, with no predetermination of how long each game will last before a new game is chosen. Additionally, this second-order hypergame includes all of the supergames running parallel to each other in different corners of our world and universe.

A third-order hypergame is a statistical representation of a second-order hypergame. In short, as a supergame is a set of games in which the first move is the choice of which game to play, a third-order hypergame is a state-space, where each state represents one action-center's understanding of the game. Where classic game theory might represent two players engaged in one game, hypergame theory would represent them as playing two different but

overlapping games—due to the fact that each player understands the game differently. This approach allows far more flexibility and aligns better with real-world gameplay. In particular, it adds great depth to game theory by spotlighting the centrality of perceptions, predictions, and counterfactuals.

Jordan Peterson: *"Abstract thinking in general, and abstract moral thinking in particular, is play: the game, 'what if?' Games are played by first establishing, then identifying, then altering, basic presuppositions. Before any game can be played, the rules have to be established."*[467]

Peter G. Bennett: *"Game theory is applied on the assumption that the players are well-informed as to the game being played, i.e. of each other's preferences and range of strategies… But in real life—and even in some 'laboratory games'—it is clear that decision-makers' perceptions of the situation may differ radically. In effect, the 'players' are trying to play different games, sometimes with unfortunate results."*[468]

What we are truly seeking, then, is not just a more advanced theory of games, but a place of unity between all of the ideas relating to action, interaction, the commons, superrationality, and so on, discussed so far.

Therefore, let's imagine a DAO (a Decentralized Autonomous Organizations established through blockchain) which is formed to serve this purpose. As a ship goes out to sea in search of fish, this DAO would be a place to discover and play every possible game. By expressing games like the Prisoner's Dilemma, Stag Hunt, or Pascal's Wager (and all of the possible strategies for each) as Smart Contracts we could do more than talk about things like superrational decisions—we could actually turn them into automatically-executing strategy-contracts.

Of course, these games mentioned above are rather like "toy models" of real, global games. And the Smart Contracts would actually contain different political, social, and economic rules—complex games with probabilistic rather than deterministic payoffs.

A sufficiently-advanced world of hypergamers will have developed, played, and tinkered with a plethora of games (which are permanently and publicly visible on a blockchain), and its players will be immersed in a protopian search for ever-better games within their hypergame. This amounts to a counterfactual ascent whose end is marked by a certain Nash Equilibrium,

wherein no player desires to play a different game nor change strategies within the present state of play. Incremental changes might include things like: developing a "strategy bot"—a Smart Contract encoding a way of playing, such as superrationality; changing the "payoff matrix" associated with different actions; modifying a voting system to lower bayesian regret; elaboration of ethics and intersubjective values; developing a method of chaos engineering which reveals and strengthens system fragilities. Each addition is like a non-expendable brick we can all build with simultaneously.

Therefore, as has been said, we are taking the spirit of ideas like a Pascalian Equilibrium, infinite play, and superrationality and making them more formal as Smart Contracts within the overall framework of a hypergame DAO. This, simply, leads towards better play, better games, and a better world. It all starts with the quintessential act of play: The counterfactual reasoning in which one imagines and predicts what others will do, and what one will do given the choices of others.

Robert Axelrod: *"To specify a game, one needs to specify the players, the choices, the outcomes as determined jointly by the choices, and the payoffs to the players associated with the outcomes. One more thing is needed. What is needed is a way of determining how the players will make their choices, or in the case of an iterated game how they will select their strategies."*[469]

Patrick LaVictoire, et al.: *"The essence of this problem deals in counterfactuals—e.g. 'what would they do if I did this'."*[470]

Noah Topper: *"Counterfactual reasoning is the act of imagining alternatives, considering what could have happened, rather than what did happen. Often, it particularly refers to the thought of 'What would have happened if I had acted differently?' Extending this notion slightly, when making a decision right now, one must consider what would happen given each available choice, until settling on one choice that determines what actually will happen."*[471]

In such a case as this, it is easy to see the benefits of having a shared medium in which we may co-develop a better understanding of each other and our interactions. Stated from the perspective of counterfactual thinking, we can turn this ephemeral process of what-if into a form of collective memory.

We can collect counterfactual thought and decision processes in Smart Contracts and DAOs.

A DAO in which this development takes place would vector towards the actualization of the best of all possible games. Given this central place of interpersonal decision processes, it would benefit us greatly to formalize strategies like tit-for-tat (conditional cooperation) into lines of code within a Smart Contract—making adoption of such strategies as simple as copy-and-paste. Stated otherwise, we might imagine "bots" which embody these strategies, and which we can easily employ in any situation.

Patrick LaVictoire, et al.: *"Consider the intuitively appealing strategy 'cooperate if and only if I can prove that my opponent cooperates', which we call FairBot… Furthermore, we can construct another agent after the same fashion which improves on the main deficit of the above strategy: namely, that FairBot fails to correctly defect against CooperateBot, which cooperates with all opponents. We call this agent PrudentBot."*[472]

In our present world, there are still many areas in which we are stuck in inferior equilibriums and often a race to the bottom. This, as hypergame theory tells us, is the direct result of two or more players perceiving the game differently, performing counterfactual reasoning about the other player or game conditions, or in other ways being strongly nudged towards certain actions, even if a seemingly superior action is apparent. Just because players can see that cooperation would be better does not at all ensure that a conditionally cooperative equilibrium will be reached. That is the gap we are addressing now.

Patrick LaVictoire, et al.: *"The results on Lobian cooperation reported here represent a formalized version of robust mutual cooperation on the Prisoner's Dilemma, further validating some of the intuitions on 'superrationality' and raising new questions on decision theory. The Prisoner's Dilemma with exchange of source code is analogous to Newcomb's problem, and indeed, this work was inspired by some of the philosophical alternatives to causal and evidential decision theory proposed for that problem."*[473]

Why we should want this is summed up quite well by the Wilsons' famous saying about the balance of cooperation and defection.

D.S. Wilson & E.O. Wilson: *"Selfishness beats altruism within groups. Altruistic groups beat selfish groups. Everything else is commentary."*[474]

If everything else truly orbits this central issue—at least in the pragmatic sense that we can care all we want about making a better world, but it will not become our world unless we address these concerns—then we should recognize that playing is one of the most important things we can do. Our hypergame is the arena in which everything else we discussed, such as collective intelligence, can be used or misused. In sum we seek the trajectory which carries us towards playing better games in better ways. Some of the ideas we discussed show us the way to better play, as in Ostrom's work on self-governance of the commons. While distinguishing ourselves as players of a hypergame, rather than a single-round game, brings the complete challenge into view: Before we play a game, we choose a game. Together, we are engaged in a game composed of these choices, and leading (we hope) towards playing the best-possible games for the longest-possible time.

All of these ideas relating to our hyperorganism have something in common, and that is wholeness-within-wholeness. In the preceding section we have developed the theory of how we can become "We" while remaining "I". It is a theory of holarchy and monadology and metasystem transitions, in which actuality tends towards greater complexity and consciousness while preserving the individuality of each holon within increasingly vast and interconnected systems. Our metarevolution is therefore a path of evolutionary self-organization which leads in the direction of complexity-consciousness and the perfection of love and freedom.

2.1.9

FREEDOM

"An unspeakable horror seized me. There was a darkness; then a dizzy, sickening sensation of sight that was not like seeing; I saw a Line that was no Line; Space that was not Space: I was myself, and not myself. When I could find voice, I shrieked aloud in agony, 'Either this is madness or it is Hell!' 'It is neither,' calmly replied the voice of the Sphere, 'it is knowledge; it is Three Dimensions: open your eye once again and try to look steadily.' I looked, and, behold, a new world!"[475]

- Edwin Abbott

In the beginning was the Deed, but before the beginning was the Good.

Before we can move any further, we need to see Freedom from its basic premises. In the end, we will find that, because Value is real, Freedom is a possible quality of Action which ought to be made actual.

In this concluding section, we hope to show that in the relationship between Value and Action, Freedom is a property of the Good, taken on by Action as it progressively perfects its love for Value. Related to this most basic concern, it will further be argued that the evolution of our hyperorganism, which is undoubtedly a metasystem transition which is bringing many action-centers into a new center-of-centers, presents no conflict for those concerned with their freedom as individuals. There is no conflict between Love and Freedom; there is no conflict between unity and multiplicity. To understand how coming together into a unified whole can simultaneously make us more individually whole, a currently under-appreciated understanding of freedom must be introduced.

Care has been taken to avoid a certain degradation of the concept of freedom. We wish to avoid smuggling in a particular misconception which is abundantly common at the time of writing.

In the current metamodern landscape of worldviews, most still privilege the interpretation of freedom as power. In casual conversation, those who invoke freedom are almost certainly invoking power—and, in the same stroke, are corrupting the valuable idea of freedom and losing it in a morass of violence and nihilism. Power, we recall, is a temporal measure of energy flow. Thus, in present-day discussions freedom is defined by how much energy one has at his disposal, and the degree to which his energy use is undisturbed by the energy use of others. In other words, freedom measures power and control in this interpretation. Power, while a useful measure, is not Freedom. And we are all, currently, suffering an impoverishment of meaning due to this conflation.

From such a perspective, there are many easily-identified political systems (or philosophies) which are pro- or anti-freedom. To simplify, from the perspective of freedom-as-power, there could be no better way to protect and perfect Freedom than by dissolving power-and-control-based hierarchies.

Conversely, organization at the scale of a hyperorganism would be the ultimate affront to this modern idea of Freedom. How can we claim, then, that our metarevolutionary trajectory coincides with freedom's perfection?

We must begin again from first principles. Freedom only starts being equated with power and control when nihilism sets in and the Good is lost as the absolute first principle of everything. Several ideas connect here and illuminate different aspects of optimistic and nihilistic Freedom. The latter of these two is generously called a (per)version of Freedom—it is really nothing but Power in disguise, as is every other concept within nihilistic metaphysics. Real Freedom is only found in optimism, especially in the philosophical threads of natural law and moral realism within it. Below, we will explore these ideas from the perspective of metaphysics, complexity science, and thermodynamics.

The common interpretation of Freedom, distorted as it is through the lens of nihilism, is expediently symbolized by the bird in flight. "Free as a bird", they say. Why do humans today conceive of birds as achieving a certain freedom we lack? Simply, because birds have options that we don't. We are stuck on the ground, and in that sense are "less free" than creatures who can take off at will. The flying bird, an inspiration to covert nihilists everywhere, captures the conflation which has turned the idea of Freedom into something indistinguishable from the idea of Power; this, in turn, means we are dealing with a version of Freedom which is measured by optionality or possibility.

The flying bird expresses a set of options which the poor, wingless nihilist lacks. Indeed, it seems to sum up the very core of the nihilist's "nothingism": If there is nothing, there could be anything; but once you have something, other somethings which were possible become impossible; nothingness is the aspiration of nihilism because it maximizes optionality; nihilistic freedom is nothing—and everything (which is not nothing) is a reduction in the space of pure possibility. The same aspiration towards Freedom as open-endedness and the mastery of power and control can be found in Heinz von Foerster's saying: *"Act always so as to increase the number of choices."*[476] We shall find that true Freedom correlates with a reduction of choices, and an increase in obedience—which sounds utterly backwards from the nihilistic position.

As the metamodern era takes shape, we are inheriting a great deal of nihilistic metaphysics, which we've said has reached a boiling point and become a full-blown meaning crisis. One can, with sufficient time, trace the exact route taken between the embodiment of certain metaphysical precepts (such as the Good being the ontological first principle of everything, or the inferior claim to ontological sovereignty made by Power, Action, or really any idea other than the possibility of perfected value) in the creation of systems, institutions, and individuals, and the inevitable appearance of some zombie-like symbol in our imagination, dreams, and myths. The former creates the latter; the latter shows us the Shadow of the former; and the former is recreated using feedback which drives it towards individuation. This happens individually and cosmically.

We can imagine, then, where we are heading. Our present meaning crisis is the bubbling up of something acrid, and only by going back to that foul beginning can we start anew with optimism. We are in the middle of a profound reorientation and restructuring. The new structure will have cracks of its own, but it will be an attempt at perfection, and the attempt is everything.

From the nihilistic position, which says that freedom is the maximization of options, it's difficult to see how our meaning crisis would even be related to concerns about freedom in a global society. From the optimistic position, it is self-evident that freedom is measured by ends, not means, and so freedom's vocation must be the search for the best-possible ends. Discovery of value, followed by its actualization as contextually-situated meaning and moral obligations, leads in the direction of freedom—as long as that idea is understood to be an internalization of one's true purpose, and thus forms a gradient ascent towards obedience and a parallel reduction of optionality. Freedom as obedience is perhaps one of the more surprising implications of optimism.

Iris Murdoch: *"The idea of a patient, loving regard, directed upon a person, a thing, a situation, presents the will not as unimpeded movement but as something very much more like 'obedience'… This is something of which saints speak and any artist will readily understand."*[477]

Aldous Huxley: *"It is by long obedience and hard work that the artist comes to unforced spontaneity and consummate mastery. Knowing that he can never create anything on his own account, out of the top layers, so to speak, of his personal consciousness, he submits obediently to the workings of 'inspiration'; and knowing that the medium in which he works has its own self-nature, which must not be ignored or violently overriden, he makes himself its patient servant and, in this way, achieves perfect freedom of expression."[478]*

D.C. Schindler: *"Viewed from this perspective, obedience proves to be the existential key to the concrete integration of the absolute and the relative. In obedience, one transcends the particularity of one's individual nature precisely without eliminating that particularity… Perfect freedom is thus identical to absolute obedience to what is absolute… What Plato means by freedom in this context is not the conventional modern liberal definition of the absence of constraints on choice…but instead the self-transcending involvement with what is really real, the open-eyed pursuit of the Good, which in fact gives the identification of freedom with 'doing what one wants' a full and precise meaning."[479]*

Iris Murdoch: *"Obedience is the freedom wherein the good man spontaneously helps and serves others."[480]*

Obedience conveys something closer to the most valuable version of Freedom than does any other interpretation in the modern canon. Indeed, it is quite difficult to find others who have written (in recent times) about freedom without conflating it with unencumbered, wholly-self-directed choice, or the aspiration to maximize one's choices. But this flight-like freedom of nihilism has undone itself. There is no self-overcoming to be found in nihilism, despite the promises of some of its famous proponents. Deep within nothing, all that is found is more nothing.

So our goal now is not to overcome a power-ontology by bending it to the will of some yet-greater, yet-emptier power. We wish to present readers with an alternative to the impoverished version of freedom which, most likely, has seemed to them like the only possible interpretation of this idea.

The metamodern freedom towards which we are hopefully heading is a part of the recovery of meaning we have now spent so much time discussing.

Meaning and freedom are inextricably linked, and we would like to argue that the evolutionary trajectory of metasystem transitions which are building up the complexity and consciousness of our hyperorganism is the best way forward for those who wish to perfect freedom. Or, in other words, it is the path which allows us to: discover the most meaningful life; become oriented in our attention and appetites towards the best-possible ends to which actions may be directed; and so participate in the perfection of Action's freedom.

So, how does Action free itself? Taking the optimistic position, Freedom is real and rooted in the Good. The Good becomes Freedom by expressing itself in Action, and Action frees itself by being obedient to the Good. Hence, freedom relies on the possibility of an ideal state of perfection, and it grows abundant in proportion to our love of the Good, which makes perfection actual.

Value loves being embodied in Action, which is its body; value-in-action is the whole content of our spiritual plenum. Freedom grows in degrees along with the progressive perfection of energy use, and culminates in the actualization of pure love between Value and Action. This is the only point of overlap between the two ideas of Freedom—both have something to do with energy, but one makes energy an end-in-itself, while the other sees energy as essentially pointing beyond itself to something greater and more fundamental.

For optimists, Value is real as an immortal, absolute possibility, and is ubiquitously expressed in the monadic plenum of our actuality. Morality, by way of this, is whatever actions (uses of energy) actualizes Value (discovers meaning) from all perspectives; morality finds a path towards the union of "good for me", "good for us", and "Good in itself". Ethics is the domain of metaphysics which deals with theories of this movement from "what is" to "what ought"—a movement mistakenly named the Naturalistic Fallacy. The view of the present book is that not only can you connect *Is* and *Ought*, but that they can't and must not be separated: That traumatic fissure is at the root of ontologies which give supremacy to Power; it is at the root of our meaning crisis; and it is at the root of moral relativism, because the Good is tyrannically ripped from its supreme and sovereign place and cast down beneath Action, becoming a slave to relative preferences deemed mere expressions of Power.

If all of the confoundingly complex systems of our world emerged through progressive, autopoietic metasystem transitions which unify goal-directed energy-systems, then the question of Freedom and its perfection involves understanding the composition, evolution, transformation and overall development of these systems.

This is why we are giving attention to the fundamental dynamics of complex systems, the arenas of action studied by game theory, and the interplay of monads (value-carrying action-centers) at different scales—as in an organism's relationship to a hyperorganism.

Freedom equals total transparency to the Good; and this transparency or permeability is a function of one's perceptions and appetites. A monad's perceptive and appetitive qualities are what fundamentally distinguish it from other monads; humans are metasystems of these real units, and this "transparency" coincides with the complexification which humanity exemplifies.

Freedom is not unobstructed access to Action or Power which points to nothing beyond itself. Instead, Value's embodiment in Action tends towards the progressive emancipation and enlightenment of everything from lesser states of freedom. And our conscious attention, says Iris Murdoch, is the *"daily bread"* of the moral life, because the perfection (purification) of our love and freedom is concurrent with the amount and quality of attention fixed upon the morally-magnetic Good.

What we seek, then, is a metaphysics which can adequately describe the phase transition between deterministic and non-deterministic action—i.e where does "consciousness" begin to carry the kinds of spontaneity and implicate moral demands found in humans? How does self-organization act as a universal ratchet of complexity on the vast journey between the illumination of the stars in space and the illumination of the mind in Man? We will find that the answer to this question is an important step on the road to perfect Freedom. The path as a whole is an actualization of a non-anthropocentric moral realism—resting on thermodynamic laws and applying to the entire universe.

Patrick Mellor: *"In order to see what a moral realism that is compatible with evolution would look like, we must ask what evaluative*

attitudes could apply universally across all of this immense diversity of structure and energy flows that has been evolving and elaborating for the last 4.5 billion orbital periods of this planet. The answer to this question will result in a moral realism which applies necessarily to any system which can be called living."[481]

Love is a transformation of energy that is oriented towards part of the Good's relative domain, which is an image (representation) of the Good's absolute domain. Love is aspirational and tends to pattern actuality with forever-expanding complexity and consciousness. This is the process of the Good experiencing and appreciating itself to the greatest-possible degree. And freedom happens in degrees according to how much the Good is exalted in the ecstatic relationship of Value and Action.

By spontaneously participating in the kind of love which ensouls another, charitably supporting their personhood, development, transformation, and wholeness, we are choosing that moment's most moral, life-affirming action. The Good, which is a part of the world and ourselves that we co-create in every free action we take, is what we must consciously imitate—becoming free over a potential tyranny of idols. That is, without the Good, we still form the "background" context for our choices through imitation of something or someone, which is idolatrous, a lesser or distorted copy, in its relationship to Good itself. It implies that a free world is built through attention, devotion, and obedience towards the Good, such that we afford each other a better model of perfection. We participate in freedom (become ourselves) via our individual renewal of this spiritual Sun, through the ritual of moral interaction.

We hope to carry our concept of optimistic freedom into the rest of this book, having assuaged fears that the hyperorganism for which we advocate is antithetical to freedom. Now though, we will turn to other deeply personal matters which directly touch the inner layers of our lives. This will undoubtedly make some even more uncomfortable than the idea of a hyperorganism. But it is not for lack of scruples that the following sections deal with transformation in humans and beyond. Our metarevolution is guided by love, and this can't possibly be expressed in passive terms.

Indeed, culture as a human metasystem, or a hyperorganism as a metasystem of cultures, must decide between an active role in human

development or the abdication of it to the least scrupulous. Self-transcendence, it has been asserted, should always lead back to the wholeness and actualization of the individual. Self-transcending love perfects the wholeness of the individual, who is a center of freedom; and those who are more whole and free are those best-positioned to form metasystems based on spontaneous participation in love.

We've been exploring things like collective intelligence from the principle that integration into larger holons, or going through metasystem transitions, is justified by the synergistic and emergent properties which result from that organization. The metarevolutionary movement in the direction of complexity, consciousness, and coherence is demanded by the conditions of our metacrisis. On the same note, but from a different perspective, we must attend to the individuals who compose the individual-of-individuals we call a hyperorganism. Our next concern is transformation and/or "transformational experiences".

"When the movement of progression reaches its apex, it does not return to a baseline of regressive movement but only goes back far enough to recover momentum for moving forward again. There is a design in Greek art which expresses this pattern of progression and regression. After each regression, the new forward movement emerges from a transforming center at the heart of the spiral."

- Joseph L. Henderson & Dyane N. Sherwood

On the premise presented near the start of this book, that our metacrisis includes a meaning crisis, there is a "blind alley" of human potential from which our metarevolution seeks to step back in order to leap forward. Certain crises are points of leverage within a metacrisis, and their resolutions have disproportionately large effects; such is the case with our meaning crisis. At the same time, we are orienting the discussion beyond this

one crisis to reveal the common ground of all metarevolutionary action. This means we must explore the topic of transformation as it pertains specifically to our meaning crisis, while demonstrating general metarevolutionary principles. The principles of transformation will lead us in the direction of freedom's perfection—and, more generally, the perfection of Action. This *telos* of perfection is "ecstatic" in a strict sense which we will explore in what follows —this being a word which indicates a "stepping outside of" and return to oneself. Edwin Abbott, speaking as his imprisoned *Flatland* counterpart, laments his own failure in this regard, while still believing in the possibility of success.

Edwin Abbott: *"Prometheus up in Spaceland was bound for bringing down fire for mortals, but I—poor Flatland Prometheus—lie here in prison for bringing down nothing to my countrymen. Yet I exist in the hope that these memoirs, in some manner, I know not how, may find their way to the minds of humanity in Some Dimension, and may stir up a race of rebels who shall refuse to be confined to a limited dimensionality."*[482]

2.2

TRANSFORMATION

"On what wings dare he aspire?
What the hand, dare seize the fire?"[483]

- William Blake

We have taken on perspectives that are as different as can be, which, for simplicity, may be called the reductive and synthetic ends of a spectrum. We have just come from the synthetic or holistic side of things by taking on the point of view of our hyperorganism. We have also done much to explain things from the vantage-point of first principles, basic units, and archetypal patterns. By way of this, we found a claim that is shocking to the nihilist, but commonplace to the optimist: Not only are monads real, but nothing is real other than monads. Reality is a monadic plenum, and every change is a transformation in the relationship of monads. The monads are immortal and, as per Leibniz, *"have no windows"* (permeability or openness to internal change via external stimuli). Complexes of monads are real as well, even if slightly less fundamentally so than monads themselves.

Ohad Nachtomy: *"While a complete animal may not itself be a monad, it may nevertheless be unified by a monad: the dominant monad, which functions as a soul in the composite living things or corporeal substances. In this way, the monad appears not just at the bottom level, metaphysically speaking, but also at the top, as that which creates, and unifies, the living thing or corporeal substance."*[484]

These complexes (or composites) do have windows, and the windows are covered by Markov blankets. This may seem an obscure point to make, but it is really quite central to the appreciation of our forthcoming discussion of transformation. If we are participants in a monadic plenum, then everything you've ever known and everything that will ever happen to you or be done by you is a change in the relationship of monads. One might imagine, analogically, the pixels of a computer screen which are both unchanging in their overall existence, and extremely ephemeral in their present state. A change of "color" in any one pixel equals what we will call "transformation". A sudden change in the overall pattern of the whole screen is what we will call a "transformational experience".

The goal of this section is to demonstrate the fundamental principles of these monadic changes. We will see that transformation can lead towards the perfection or annihilation of the love between Value and Action. It is our duty to steer the future towards the perfection of this love.

Transformation (and/or a "transformative experience") neutrally describes changes in who you feel yourself to be, how you see the world, what you find meaningful, how you relate to people and planets, and the heuristic patterns you employ to make decisions. It is a neutral term because transformation is what has led to the meaning crisis we explored in the first half of the book, but it can also lead us out. The best and worst of cosmic potential are the twin horizons which are approached by opposing paths of transformation. Transformation is what happens during the process of free-energy minimization, which patterns the universe with ever-changing, self-organizing relationships between monads. Anthropocentrically, this is a change in one's sense of oneself.

L.A. Paul: *"The sorts of experiences that can change who you are, in the sense of radically changing your point of view (rather than only slightly modifying your preferences), are experiences that are personally transformative. Such experiences may include…a horrific physical attack, gaining a new sensory ability, having a traumatic accident, undergoing major surgery, winning an Olympic gold medal, participating in a revolution, having a religious conversion, having a child, experiencing the death of a parent, making a major scientific discovery, or experiencing the death of a child… If an experience changes you enough to substantially change your point of view, thus substantially revising your core preferences or revising how you experience being yourself, it is a personally transformative experience… They can [also] be epistemically transformative, giving you new information in virtue of your experience… The sort of case that is especially interesting… involves an experience that is both epistemically and personally transformative… Having a transformative experience teaches you something new, something that you could not have known before having the experience, while also changing you as a person. Such experiences are very important from a personal perspective, for transformative experiences… function as crossroads in your path towards self-realization."*[485]

Transformation is the basic movement of actuality away from or towards any ontological first principle of possibility, as expressed through any action-center's reconfiguration and repatterning; and we will tend to call it a "transformational experience" when it is a nonlinear moment of

transformation (and especially those moments which may be described as phase shifts or metasystem transitions).

Andrea Gaggioli: *"The review of previous research on personally transforming experiences suggests that, in spite of commonly held assumptions, psychological change is not always the result of a gradual and linear process that occurs under conscious control. Rather, under certain circumstances, enduring transformations can be the result of epiphanies and sudden insights. But how do these transformations occur? The theory of complex dynamical systems, which has been applied across disciplines as diverse as physics, biology, ecology, chemistry, political science, may offer a useful framework to address this question. From the perspective of complexity theory, humans, like all living organisms, are open, self-organizing systems that attain increasing levels of complexity and adaptation through the continuous exchange of energy and information with the environment… Dynamic systems evolve in complexity through the generation of emergent properties, which can be defined as properties that are possessed by a system as a whole but not by its constituent parts. These emergent phenomena are the result of feedback loop mechanisms that affect the system's equilibrium state, either amplifying an initial change in a system (positive feedback) or dampening an effect (negative feedback)… When the system has a stable or equilibrium structure, the fluctuation is usually very slight and can be offset by the negative feedback effect of the structure. However, even a single fluctuation, by acting synergistically with other fluctuations, may become powerful enough (i.e., a giant fluctuation) to reorganize the whole system into a new pattern. The critical points at which this happens are called 'bifurcation points,' at which the system experiences a phase transition towards a new structure of higher order."*[486]

Mark C. Taylor: *"Self-organized criticality occurs in complex systems governed by nonlinear dynamics. As a result of this nonlinearity, events are amplified through positive feedback loops and can have effects disproportionate to their causes. Dynamic interactions among individual elements in the system generate global events that require a holistic description that cannot be reduced to an account of individual elements… As order breaks down, societies drift toward the edge of chaos until they reach*

the condition of self-organized criticality, at which point local events can trigger global changes."[487]

Joseph Dodds: *"At these bifurcation points, nonlinearities rule as the slightest difference in starting conditions or the tiniest fluctuation causes a radical shift, a phase transition to a new attractor or set of attractors."*[488]

Mark C. Taylor: *"Since nature, society, and culture…co-evolve, a change in any of these systems leads to changes in the others… The new emerges far from equilibrium at the edge of chaos in a surprising moment of creative disruption that can be endlessly productive."*[489]

Transformation is an expression of Action changing its relationship to itself and Value—specifically in the holistic pattern of interactions between monads, and their ongoing self-organization into novel holarchies (which can be human souls, cities, or entire planets). So, when Power usurps the status of the Good as first principle, transformation can lead only towards a nihilistic power-struggle; the soul is mutilated, as a knife through a heart, until the only imaginable solution to the hemorrhaging seems to be to push the knife deeper to plug the wound.

Further, depth and development can be called the two dimensions of transformation. Combining this with the ideas above, we see that there is some steady, linear movement in depth and development called transformation—i.e. a child's early psychological development. And there are nonlinear moments called transformational experiences—i.e. a breakthrough of imagination, an insightful epiphany, or hierophany. Development occurs as politics and revolutions; it occurs individually as "growing up" and "waking up"; and it occurs socially as the progression of political-economic systems which embody the perfection of freedom (something which frameworks like Spiral Dynamics and Integral Theory attempt to map).

Ken Wilber: *"These stages of interpretive frameworks are just like grammar—they are 'hidden maps' that determine how we see, think, and generally experience the real territory around us. If it were possible for a six-month-old to have a real Enlightenment experience—just play along here—whatever it would be like, we could be pretty certain that it would be different from how an adult would experience it. And the main reason, of course, is that the infant hasn't yet really grown up. And it turns out that 'growing up' means*

moving…through these stages of increasingly adequate interpretive frameworks—so much so, that I refer to the sequence of these stages as 'Growing Up.' In that regard, these stages are distinguished from, say, the stages of meditative development that lead to Enlightenment, or Awakening— stages that I refer to as 'Waking Up.' So, as we'll continue to see in clarifying detail, human beings have two major types of development available to them: Growing Up and Waking Up… Part of the understanding of any new and Integral…spirituality would include the fact that we actually have two major axes of spiritual development: states and structures. The first, with regard to spirituality, is meditative states of consciousness… And second, we also have the growth of structures of consciousness (for example, magic to mythic to rational to pluralistic to integral, with a different view of spirituality at each level)… States are something we can look at; structures are things we look through."[490]

Ronald F. Duska & Mariellen Whelan: *"[And so] development involves basic transformations of structure, that is, the shape, pattern and organization of a response… Moral development, then, is not a process of imprinting rules and virtues but a process involving transformation of cognitive structures… Moral development is not changing one's point of view on a particular issue, but transforming one's way of reasoning, expanding one's perspective to include criteria for judging that were not considered previously."*[491]

Depth and development map onto what might be called soul-oriented and spirit-oriented philosophies and their related practices. These will guide our discussion of how transformation can connect us with the Good. Power is the blind-alley where we are currently stuck, while the Good awaits discovery by those who dare to step back and leap towards another path.

Recall again the features of monads: The Good is Monas Monadum, and our actuality is a plenum of monads which perceive (represent) it with greater or lesser clarity—containing *Actus Purus* in greater or lesser degrees. This means there is nothing "sterile" or soulless in the universe, and at least the basic building blocks of love, freedom, and consciousness are present everywhere and in everything.

Depth, then, is in-touchness and sympathy with the multitude of monads which have self-organized into a human soul; and it is seeing, in the sun's transformation of hydrogen particles into helium, one small but significant step towards human-level consciousness. It is pictured as a descent into a valley, an ego death, or the philosopher's return (going down) into the cave. This will lead us, in the following discussion, to explore the theory and practice of a soul's immersion in itself, in its unconscious domain and Shadow; it leads us to consider rituals and symbols of transformation which foster the experience and integration of depth; and it leads us to reconsider things like the dichotomy of Man and Nature, or (in parallel) psychology and ecology.

Development is simply the tendency of actuality to allow for the negentropic self-organization of action into increasingly complex and conscious centers of action (composite monads). It is pictured as an ascent to the peak of a mountain, an ego's "flight" into self-transcendence, or the philosopher's initial escape from the cave. Depth should be pictured as a descent, or the "going down" to the cave. Thus, when we speak of transformation, we are speaking about the dual movement of philosophy, which, D.C. Schindler notes, is dramatically depicted by Socrates in Plato's Republic.

D.C. Schindler: *"In the analogy of the Sun, the mind that pursues the Good must begin with and ascend from a relative image in order to grasp the Good's absoluteness and therefore transcendence, but it must simultaneously descend from the Good to its image, and thus perceive its relativity. These movements, as distinct as they are, cannot be simply separated from one another without undermining both of them. Instead, they form a complex whole in the flash of the paradoxical 'moment'…which connects contraries and thus lies at once within and beyond time."[492]*

As we explored in the first half of the book, a meaning crisis has resulted from failures in the metaphysical underpinnings of transformation, and in the actions which either perpetuate or destroy the actualization of the Good. It is a crisis of depth and development, and thus of transformation. Mythologically, development is the quest to open the door to the Good; depth

is the quest to close the door to Power. Zombies symbolize a complete failure in both of these domains of transformation.

Our zombie apocalypse is the mature phase of enacted and embodied nihilism. Thus, what we are seeking here is a metaphysics that does not lend itself to pathologically ontologized power or other deviations from the Good as the absolute first principle of everything. With the sovereign Good as the basis for transformation, we can now explore the How?—as in, the theory and practice of transformation which leads in the direction of the Good, and thus in the opposite direction of our present meaning crisis.

In the following section, we will explore transformation's dimensions of depth and development, which correspond to soulful and spiritual practices. More visually, these are valleys and peaks; a soul therefore may suffer from shallowness as a failure to be immersed in its depths, and spirit may have limited or arrested development and fail to reach new heights (or it might have an Icarian "over-flight" which lacks grounding and ends catastrophically).

Richard Stromer: *"To help restore and elucidate the distinction between soul and spirit, [James] Hillman has developed the contrasting metaphor of 'peaks' and 'vales', where peaks imaginally represent the concept of spirit and vales symbolize the notion of soul. 'Peaks have belonged to the spirit ever since Mount Sinai and Mount Olympus, Mount Patmos and the Mount of Olives, and Mount Moriah of the first patriarchal Abraham,' he observes… [He credits] Abraham Maslow for introducing the term 'peak experience' to describe the personal encounter with spirit… Hillman ascribes to Keats his use of the term vale to reflect the notion of soul, citing the poet's allusion to the world as the 'vale of soul-making.' He also notes that in the traditional religious symbolism of our culture, a vale is 'a depressed emotional place—the vale of tears; Jesus walked this lonesome valley, the valley of the shadow of death.'"[493]*

James Hillman: *"This relationship has also been put mythologically as the soul's connection with the night world, the realm of the dead, and the moon. We still catch our soul's most essential nature in death experiences, in dreams of the night, and in the images of lunacy… The world of spirit is different indeed. Its images blaze with light… Its direction is vertical and ascending."[494]*

Bringing in historical contexts and real examples, we will find that transformation involves the synthesis of opposites: spirit and soul, exoteric and esoteric, Apollo and Dionysus, transcendent and immanent, absolute and relative. This will result in the perfection of transformation, the overcoming of our meaning crisis, and the illumination of broad metarevolutionary principles which may be carried forward to any metacrisis.

Due to the nature of transformation, and the role of the absolute Good as an ontological first principle, there is a frequent need to speak in symbols and myths. Specifically, if the Good is our first principle, and Action is the Form which informs all subsequent Forms, then we can only speak indirectly about the Good itself. But we can speak about it most directly when we refer to action. Therefore, on the micro end, we will explore an Energy Systems Language (or Energese) and other basic symbols which can be used for an action-based account of anything. From that, a great wealth of symbols from the world's religious visionaries and artists provides the macro (synthesis) end of a *characteristica universalis*, or universal language. Of particular interest in this context are quintessences and mandalas, or other symbols of wholeness/perfection/immortality, as well as other advanced syntheses of symbols like the Christian cross. All of these, we claim, relate to energy transformations. And the way we transform energy is the entire content of what we call "morality".

A main component of all transformation, therefore, is the production of compound symbols (mapped out in Energese, other basic symbols, and condensed metasymbols like mandalas, tetramorphs, or quintessences). Or, in other words: the Good comes into actuality as Action which endlessly transforms itself; symbols express patterns of energy transformations which either perfect or destroy goodness in its relative, actual, experiential context; the nature of our depth and development is conditioned by the symbols (and myths) which transformation generates; and the actualization of the Good from its state of metaphysical possibility is the goal (or desire) of transformation. And that special kind of perfected action/energy transformation which leads actuality in the direction of the Good is called love.

To fully achieve this vision of transformation, we must therefore combine all of our "basic units" of complexity (atoms, bits, calories, etc.) into monads. Monads, as a metasystem, include and transcend units like atoms and bits, or categories of body and soul. Transformation touches all of these domains. Thus, monadology is the study of spirit and soul. Transformation can be nothing else but the evolutionary self-organization of monads.

Cleaving these elements, or allowing one to have ontological dominance over the others (as in the supremacy of atoms in certain materialistic worldviews), is a perennial point of failure which we have said is at the root of our meaning crisis. Plato is sometimes accused as a culprit of such division, due to the "two worlds" interpretation of the relative and absolute. When, in fact, centering the Good (or Monas Monadum) as transformation's object of love is the only way out of this crisis, and this sovereign centrality of the Good is Plato's true contribution to our philosophy. This means we must take the proper view of the Good as simultaneously absolute and relative—the same being said of Monas Monadum and monads, which correspond exactly to transcendent and immanent, or absolute and relative, and which are not "two worlds", but "two sides" of the Good. All monads simultaneously are Monas Monadum, and relative representations of it (making them, as Leibniz said, *"big with the future"*).

Ira Progoff: *"The reflections of reality in the mirror of the psyche are necessarily imperfect versions of the original. This is so for several reasons, but primarily it is because they are representations of the infinite in finite form."*[495]

While the zombie apocalypse is gnawing away at humanity, transformation is the metarevolutionary condition we seek to change at its metaphysical core.

This is an optimistic manifesto. Optimism is the metaphysical orientation which holds that the Good is real and possible, informs all Forms, and concretizes itself within action-quanta in our actuality. Leibniz was of course ridiculed (and misunderstood to this day) for his optimistic pronouncement that we live in the *"best of all possible worlds"*. His reason for saying this was his faith in the goodness of God; i.e. if God exists, and God is Good, then He would choose to create the best actuality from infinite

possibility; free to make any choice, He makes the best one. This train of thought is best understood as the assertion that, metaphysically, our universe contains more potential goodness than any other possible universes, because it is the product of physical and metaphysical choices of a Good creator, and because "best" can be judged as the perfect balance of order and variety.

Francis Heylighen: *"The aspects of distinction and connection determine two dimensions characterizing complexity. Distinction corresponds to variety, to heterogeneity, to the fact that different parts of the complex behave differently. Connection corresponds to constraint, to redundancy, to the fact that different parts are not independent, but that the knowledge of one part allows the determination of features of the other parts. Distinction leads in the limit to disorder, chaos or entropy, like in a gas, where the position of any gas molecule is completely independent of the position of the other molecules. Connection leads to order or negentropy, like in a perfect crystal, where the position of a molecule is completely determined by the positions of the neighboring molecules to which it is bound. Complexity can only exist if both aspects are present: neither perfect disorder (which can be described statistically through the law of large numbers), nor perfect order (which can be described by traditional deterministic methods) are complex. It thus can be said to be situated in between order and disorder, or, using a recently fashionable expression, 'on the edge of chaos'."*[496]

It is not right to take Leibniz's saying as a judgment of the present state of our world—which he would certainly not call "the best". If God's game is to choose the best of all (metaphysically) possible worlds, Man's game is to choose the best of all (physically) actual worlds—both are hypergames, the latter being a microcosm of the former. We are playing a
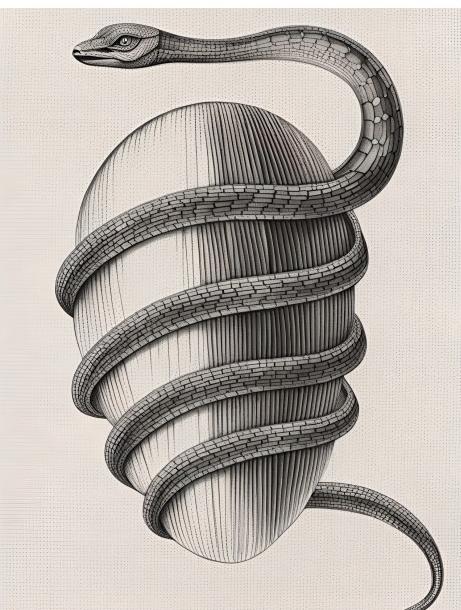
bridging role between Value and Action, and our fundamental constraint is compossibility.

The view of the present book is that God is an extra step in all this—a mythologizing—and that the Good is all that is needed for optimism.

Optimism is the conviction that the Good is the absolute first principle of everything, and that we therefore live in the best of all possible worlds, because its metaphysical underpinnings allow action to lead actuality in the direction of perfection. Transformation, then, is what monads do in order to bring about the greatest actual goodness from the Good's absolute possibility. Love is the name for any transformation of energy which makes our actual world a closer representation of the possibility of perfection which exists in the absolute.

Therefore, a monad avoids shallowness by participating in a self-actualizing immersion in its depths; and it avoids nihilism by self-transcending to new spiritual peaks. Through these complementary actions, monads come to have better perception of the Good. This decreasingly obstructed (or continually clarifying) relationship between monads and Monas Monadum is the basis for good action. As metarevolutionaries, we seek to change degraded patterns of transformation into that pattern called Love, which is energy refined and illuminated by the Good. We live in a spiritual plenum—everything is inspirited and ensouled to some degree, and there is nothing which cannot attain towards the Good, which bestows a *telos* upon transformation as an always-available object of love awaiting our attention.

This pursuit of perfected transformation is mythologized as the quest for immortality—the argument being that such a quest is a conjunction of two previously mentioned quests: one for the Grail and one for the Ring. The former of these is an ascent to the Sun's potentially-infinite illumination, and the heroic return (integration) of its gifts; the latter is a descent to shadows and heroic negation of the festering which carries on inexorably in those places where sunlight fails to reach. The following discussion will be set alongside this quest, and we will see how the pursuit of immortality describes life's only reasonable (optimistic, non-nihilistic) goal, because it involves aspiring to create a world in which the Good is the object of our love and therefore becomes a waypoint for transformation—wherein, everything which can

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potentially represent the Good comes to resemble it in increasing degrees of perfection.

Gottfried Leibniz: *"Every perfection derives directly from God… These divine perfections are shared by all creatures, and are to be found in even the most insignificant. In every substance there is something of the infinite, an imprint or representation of God's omnipotence and omniscience."*[497]

Dante Alighieri: *"[So we should say that] paradise is everywhere, though the grace of the highest good is not shed everywhere in the same degree."*[498]

The Kardashev Scale, which is traditionally a measure of civilizations based on energy capture/use, is also a measure of meaning. For what is meaning but contextual value, and a measure of how well we transform energy in relation to a theoretically perfect actualization of the Good? The calorie is a basic unit of energy, because it is a measure of heat energy, the kind which the arrow of time inexorably leads towards. If our meaning crisis makes our metacrisis insurmountable, then it is transformation's dimensions of soul and spirit that we must understand if we wish to change course. A society high on the Kardashev Scale might still experience loss of soul or spiritual impoverishment. If a society's worldview ontologizes power (or freedom or energy) over or without the Good as a first principle, then the transformation of energy will only serve "progress" from this limited vantage point of soulless material. From the monadic perspective, however, a Kardashev Scale might explicitly measure the scale of energy capture/use, but implicitly it would be understood to carry an ethical demand: to desire and love the Good, and thereby become the microcosm of macrocosmic perfection. And in that demand we see the origin of our reverential attitude toward the heart: the common symbol of the Sun within Man.

The goal of a good person, system, or civilization is to love the Good, to give it attention and sharpen our perception of it, to allow ourselves to be enlightened by it, and to take actions which actualize the best of all possible worlds.

The alchemical insight, which will be key to the following discussion, that all metals will transform into gold if given the right time and conditions,

is certainly true in light of a monadic universe. Symbolically, this insight is equivalent to the statement that there is no monad which is not a more- or less-perfect representation of Monas Monadum. Monads are the combination of unique perception-representation (its view of the Good), and its appetite or desire towards some object of love—which is the principle of action which alters perceptions—in a spectrum of freedom which spans total determinism to total spontaneity.

And the unfolding of a specific actuality (which may be called "life") is nothing other than the perpetual transformation of relations and compositions of many metasystems of monads; their ongoing self-organization and metasystem transitions lead the universe in the direction of greater complexity-consciousness, more perfect freedom, and Love's perennial victory over Power. Thus, optimism: Conviction that transformation may behold the Good as its object of love, and that our actual world may therefore come to more closely resemble it.

2.2.1

IMMORTALITY

"No yearning for an afterlife…
but only longing for what belongs to us
and serving Earth, lest we remain unused."[499]

- Rainer Maria Rilke

Manifestos from all times have, in their own ways, boldly promised immortality. And this one is no different, so let's get to it.

The healthy version of the quest for immortality mythologically conveys the complete spectrum of transformation. It is composed, on one end, of the well-known Hero's Journey, or the quest for Holy Grail in all its guises. It is also the complete philosophical movement depicted in Plato's myth of the cave—the "escape" and "return". All of these involve a transformational and self-transcending experience which is then "brought down" or integrated into ordinary life—and the culmination of this is, microcosmically, the perfected mind, and, macrocosmically, the perfected city, planet, and cosmos. This is immortality's spiritual and developmental face.

And we can only properly pursue this goal in the context of immortality's negative (in the sense of subtraction) aspect, conveyed mythologically in the journey to destroy the One Ring (as in Tolkien's *"Lord of the Rings"*), or in Prospero destroying his magical book (as in Shakespeare's *"The Tempest"*). Plato's myth of Er conveys what happens when the door to Power is left open, rather than perennially closed as in the former two myths. This is the other face of immortality, that of soul and depth. This part of the story is about our relationship to Power.

In the first half of this book, through exploration of our meaning crisis, it was implied that something like God or the Good was an essential component of being human, insofar as this kind of transcendent symbol of perfection gives us something to move towards, mimetically desire, seek to grasp, or love. Seeing it moves us towards being it. The journey towards it includes the paths of depth and development that we began to explore in the previous section—where development is transformation's spiritual path, and depth is transformation's soulful path. And now it's time to put these together in a well-rounded transformational orientation: Immortality.

The pursuit of immortality, in the present understanding, is indistinguishable from pursuing the perfection of selves-within-selves (arrangements of relations in the plenum of monads)—the transformation of people and planets and holons at every scale of reality. Transformation is a process of profound personal change, and transformative experiences are nonlinear, discontinuous "phase shifts" of change. The quest for immortality

incorporates both of these. It is the journey towards something that keeps changing as we change our perspective to it. It is the quest to become ourselves and then transcend our limits in every meaningful sense: limits of time, experience, meaning, beauty, and abundance. Robert Ettinger, making a point about a more literal, biological immortality, makes a point that is just as relevant in our current context.

Robert Ettinger: *"Immortality…is an opportunity for growth and development otherwise impossible, and it is consistent with our highest current values."*[500]

Ira Progoff: *"In a similar vein…there is the Islamic story of a pilgrim on the road to Mecca. The road he is traveling is the goal he is seeking. Mecca is the road, or more exactly, Mecca is the quality of the desire with which he travels the road. The image of the holy city, be it Mecca or Jerusalem, is a symbol that represents the relation to what is real in human existence. To reach the holy city is, symbolically, to have attained the point of ultimate realization… The symbol expresses the goal which directs the course of action, but the goal is not separate from the steps by which it is reached… In this sense, too, wholeness of personality is not a goal that is off in the future; it is a condition of being that becomes present in the course of the work that seeks it… Even more fundamental, the intimation of immortality which is so strong a yearning in man is no longer reduced to being an intellectual belief that must be projected into some nebulous world to come. Immortality becomes present, a condition of reality that is entered now, as the individual orients his existence."*[501]

The ongoing journey towards immortality is intrinsically rewarding and transformative. The quest for it tends to pattern our existence with an include-and-transcend movement through increasingly complex metasystems; the quest perpetually solves one challenge, while opening up another; and the heroic-revolutionary response to these challenges results in the rejuvenation and perfection of everyone and everything.

Edgar Morin: *"Here…we come up against the problem of Gödelian undecidability. Gödel's theorem, seemingly limited to mathematical logic, is applicable a fortiori to all theoretical systems. It shows that, in a formalized system, there is at least one proposition that is undecidable. This*

undecidability opens a crack in the system, leading to uncertainty. Certainly, the undecidable proposition can be proven in another system, even a metasystem, but these too will contain a logical crack. There is in this a kind of unsurpassable barrier to the culmination of knowledge, but we can also see there an incitement to surpass knowledge by the construction of a metasystem, a movement, which, from metasystem to metasystem, causes knowledge to progress, but always, at the same time, causes new ignorance and new unknowns to appear… Here we can see how this uncertainty is linked to the theory of open systems. In fact, the metasystem of an open system cannot be other than open itself, and in turn, also needs a metasystem. There is, therefore, a correspondence between the open perspective at the foundation of the theory of open systems and the infinite crack opened at the summit of every cognitive system by Gödel's theorem… As soon as a theory proves incapable of integrating observations that are increasingly important, a veritable revolution occurs, shattering the system that created both its coherence and its closure.''[502]

This endlessly evolving goal, whether in systems of knowledge and wisdom, or in other complex systems which develop through this process of Gödelian self-surpassing, is something that is always worth pursuing. However, it can be (and has been) misunderstood and parasitized. We should address the dark side of this quest. The unhealthy version of immortality is the pursuit of endless life without endless beauty, meaning, depth, and development. It can appear as the dehumanizing self-transcendence offered by certain religions or political ideologies, such as the promise of an eternal afterlife for the faithful or cultural deification for the political martyr. Or it appears as the pursuit of life-extension detached from the quest for morally transformative experiences and a life of overflowing beauty and meaning. We will look at these dangers in more detail in what follows.

It's important to remark that the conception of immortality in this book intends to include and transcend the refusal to engage with this topic on the basis that it is one of the many faces of "terror management"[503]—which is to say, our fear of death and nothingness, our kenophobia, puts us in a state of constant terror, for which things like religion have traditionally be therapeutic. There is, in the present version of the pursuit of immortality, *"no yearning for*

an afterlife", as Rilke wrote. We don't deny that fear of death can be a powerful motivator, but there is more to immortality than the management of existential terrors. And if we focus on immortality only as a futile denial of death, then we risk leaving closed the doors which lead to the highest realms of human experience—the ones which are opened along the endless path towards immortality.

This, like other topics we've been exploring, requires us to become the mediating, synthesizing embodiment of a tensive-creative unity of opposites—as expressed by symbols like the red sun balanced on the backs of Aker, or the two faces of Janus which represent the self-assertive and self-transcending aspects of all holons. Another god, Hermes, is perhaps the best symbol of what a healthy complex of oppositional tendencies looks like in our present context. This will come into focus in the coming discussion. For now, we only need point out that Hermes, unique among the Greek gods, traveled between the Underworld, Overworld, and Earth. Thus Hermes is a symbol for action which coherently mediates between all realms of reality. In Hermes, Apollonian order is joined in dialogue with Dionysian chaos, creating a balance between the paradoxical tendencies or "personalities". In practice, this means that our search for immortality can be conceptualized as our own earthly mediation between self-transcendence and self-assertion, between relative and absolute, and between other potentially-oppositional domains.

This discussion of immortality is metarevolutionary because the quest for it leads in the opposite direction of the "zombie apocalypse"—our mimetically self-perpetuating meaning crisis—yet what we learn will be applicable to all action and any future metacrisis.

The quest for immortality is, in the realms of depth and development, the collection of symbols, myths, rituals, and institutions which establish, renew, and transform our deepest, most sacred values; it is attention and devotion to the Good, such that life becomes an obedient reflection of love, freedom, beauty, truth, and wisdom. It is a description of the process by which the inner and outer are married in a unity of opposites, and are reciprocally transformed towards ever-greater perfection, more expansive meaning, and the healthy, dynamic interplay of self-assertion and transcendence. Or, in other words, immortality is a teleological process which simultaneously inspirits

souls and ensouls spirit: The Good is given the most/best actuality in centers of action, and Action is given the greatest perfection.

We have explored some of the pitfalls of, for example, the totalitarian type of self-transcendence, which does not reassert and strengthen individuality at every level, and instead erodes a person's wholeness. History is full of this unhealthy self-transcendence which treats individuals as a living source of fuel, or as mechanistic parts of a machine, or as cells of an organism (the structuralist's social organism which is a perversion of the idea of a holarchic hyperorganism composed of wholes-within-wholes). Unhealthy self-transcendence will always fill the role of integrating people into larger holons, but in its parasitic way that strips away individual selfhood. This is why we've said that an ethical hyperorganism's superordinate goal is to take up space in order to give it back—ethically competing for a niche that tyranny always aches to fill. This happens, for example, through instituting forms of conditional cooperation which are more evolutionarily stable than strategies based on unconditional cooperation.

The absence of healthy self-transcendence in favor of absolute self-assertion isn't freedom at all—it's a world in which the most sociopathic forms of transformation compete for your soul. At the same time, absence of all self-assertiveness is not some utopian unity of love—it is a world in which love has no meaning, because there are no true individuals left to freely experience and enact it. Immortality is the movement towards a more perfect, ultimate freedom, in that we become progressively individuated as this journey reveals, renews, and transforms our true selves and unleashes our greatest potential.

In light of all this, the opposite of immortality, in the present understanding, is not exactly (or exclusively) mortality. Rather, it is something closer to "poverty". You could say that poverties of freedom, love, and meaning are the defining traits of "mortal" life, in that abundance, depth, development, and continual transformation are the defining traits (or results) of this true quest for immortality. In place of an immortal society exists an impoverished one—in place of optimism is nihilism.

Our metarevolution has a trajectory of immortality in that we seek a society in which time, experience, meaning, love and freedom tend toward

abundance. What follows are mutually-supportive pieces of this true quest for immortality which expresses our desire, and duty, to actualize the Good.

Lifespan & healthspan

The most straightforward notion of immortality is "living forever". Quite simply, it is true that aging and death are our biggest public health crises, and it is not wrong to connect the dream of overcoming biological decay with the idea of immortality. On top of this, it is more or less implied that if we overcome the problem of death by old age, we would want to eliminate as many diseases as possible and give ourselves the best possible healthspan. However, in the absence of a holistic view of immortality, which we presently explore, this limited version of the idea can be called "vampiric". The vampire is the symbol of pathologically self-assertive immortality—life which never ends, yet tragically has no deeper reason to continue.

Nietzsche asked: *"Is life not a thousand times too short to bore ourselves?"*[504] But metarevolutionaries ask: If life is set to become a thousand times longer, are we simultaneously doing enough to ensure that it becomes a thousand times more meaningful? Immortality is a quest which includes this goal of extending the human lifespan, possibly to the point of biological immortality (with anti-aging technology which keeps pace with aging itself), but we do not consider it sufficient by itself. And it is not, by itself, the true immortality envisioned here. To understand the difference, let us not strive for endless life *per se*, but instead seek a world so beautiful that even infinite life would seem too short.

Hobbes' picture of life was: *"Solitary, poor, nasty, brutish, and short."*[505] But in our quest for immortality we seek a life which is connected, abundant, loving, benevolent, and endless. We are not satisfied with vampiric immortality. There are many worthwhile questions to consider and technologies to explore in the realm of anti-aging, but for present purposes, it is enough to allude to these and place them in the context of a greater, deeper immortality. So, beyond human lifespan and healthspan, we must continue to form a complete view of the immortal quest.

Dreaming & virtual reality

We need a version of immortality which includes its "negative" face (facing death/suffering/temporality or the ever-possible degeneration of humans into zombies) and "positive" face (the ongoing, free-energy minimizing transformation which makes actuality a more-exact image of the absolute Good).

The ubiquitously recognized "danger" of immortality is an intolerable and interminable boredom—but this is only an issue when you define immortality as deathlessness rather than as a quest of endless transformation towards perfected value-in-action. Within a more inclusive version of this quest, we can find a place for biological immortality and the scientific quest for bodily health. But right now it's more important to discuss those things which make it comprehensible why we would want to live forever, not how we could do so. This "why" aspect of immortality informs the rest of this discussion, and it begins with a consideration of technology and the deliberate design of a culture with a multitude of transformational affordances. Let's consider some of the conditions which allow a biologically immortal human to live an endlessly meaningful existence.

A necessary part of becoming fully ourselves is stepping outside of ourselves. For example, we can imagine a technology that will one day allow human consciousness to jump between various mediums, whether organic or synthetic—subjectively experiencing radically new perspectives and therefore being invited into self-transcendence. Paraphrasing Jaron Lanier, the best part of the VR experience is the act of *"taking off the goggles"*[506] (a phrasing that will no doubt feel dated soon, but will hopefully remain understandable). In other words, we are considering this kind of "altered" experience of reality because of its lasting effect on how we see, feel, and exist in everyday reality—not because we want to permanently abscond to a virtual "sandbox" with no connection to the rest of the world. In the context of a world where one can live indefinitely, it will inevitably follow that monotony and meaninglessness can become a fate worse than death. As such, our goal should be to have a society with the greatest abundance of beauty, opportunity, and as Abraham Maslow would say, a *"continued freshness of appreciation"*.[507]

Andrea Gaggioli: *"In principle, a transformative experience could be elicited by various media—including plays, storytelling, imagery, music, films and paintings. However, I argue that a specific technology—immersive virtual reality (VR)—holds the highest potential to foster a transformative process… A VR system is the combination of stereoscopic displays, real-time motion-tracking, stereo headphones and other possible sensory replications, which provide the users a sense of presence—that is, the perception of 'being there'. Thanks to these unique characteristics, VR can be used to generate an infinite number of 'possible selves', by providing a person a 'subjective window of presence' into unactualized but possible worlds. From this perspective, virtual reality may be referred to as an epistemically transformative technology, since it allows individuals to encounter totally new experiences from a first-person, embodied perspective. The ability of VR to allow an individual to enact a possible self from a first-person perspective has been effectively exploited in psychotherapy. For example, virtual reality worlds are currently used to expose phobic patients to 3D simulations of the feared object or situation, in order to help them to handle the unsettling emotional reactions… However, I contend that beyond clinical uses, the potential of VR for eliciting epistemically transformative experiences is still largely unexplored. The possible uses of VR range from the simulation of 'plausible' possible worlds and possible selves to the simulation of realities that break the laws of nature and even of logic. These manipulations could be used as cognitive perturbations, since, as previously noted, appraisal of uncanny events (such as seeing an object levitate for no reason), causes a massive need for accommodation. Hence, the experience of such VR paradoxes may offer new opportunities for epistemic expansions, providing the participant with new potential sources of insight and inspiration."*[508]

Therefore, immersive VR technology is a prime example of striving to make life more meaningful alongside our advances in life-extension. Like the forms of collective intelligence and other metasystems we explored, VR should ultimately be seen as a way to better understand ourselves and to fall in deeper love with the world. If we choose, for example, the common animals of Earth as our "avatars" (giving us a simultaneously human and non-human perspective), then we will be one step closer to creating a complex unity of

subject and object. In other words, it would be a self-expanding experience. A parallel idea of which we have already spoken, that of extended senses, can be appreciated in this new light as a suite of technologies which expand horizons and assist in self-transcendence.

Andrea Gaggioli: *"Interestingly, VR is a technology that allows for not only simulating a plausible possible self, but even simulating the self-experience of another living organism, thus providing access to what Nagel considered impossible to access—that is, 'what is it like to be a bat'... I believe that the study of how to use technology to support positive transformations of the self should not be considered a deterministic, technologically-centered perspective on human personal development. The final aim of transformative design, as I see it, should not be confused with the idea of 'engineering self-realization'. Rather, I hold that the objective of this endeavor should be to explore new possible technological means of supporting human beings' natural tendency towards self-actualization and self-transcendence... I introduce Transformative Experience Design (TED), a conceptual framework for exploring how next-generation interactive technologies might be used to support long-lasting changes in the self-world. At the center of this framework is the elicitation of transformative experiences, which are experiences designed to facilitate an epistemic expansion through the (controlled) alteration of sensorial, perceptual, cognitive and affective processes."*[509]

Immersive VR points to the kind of transformative experience design which can change how we view ourselves, the world, or the interconnectedness of the two. A healthy transformation, in this light, would not dissolve the unique individual into an undifferentiated oneness, but rather build a generative unity of opposites between which we are a force of mediation. A "Hermetic" balance looks rather like a contradiction, even as it continually leads in the direction of resolutions. Unity and multiplicity are mutually-supportive and yet never reach a stable equilibrium; our quest is to love the idea of perfection and strive to make it actual, even as we inevitably fail to reach that always-receding horizon.

Robert E. Carter: *"[This was] Nishida's strength... He did not try to resolve the contradictions of experience, but saw them as inescapable*

descriptions of the way the world is, as it is known by us. The result is not a synthesis, but a unity−in−contradiction, an identity of opposites."510

In such a world, human/environment is not an absolute pair of opposites; we are the perceiving subject, but the "external milieu" (commonly called "environment") is understood to be dynamically intertwined with the internal milieu (commonly called "mind" or "consciousness"). We are subject-objects—perceiving and perceived; agents and recipients of transformation.

Naturally, then, it is the metarevolutionary view that having a totally immersive experience from the perspective of another living being is one piece of a more complete immortality. Just as, in a similar train of thought, we said it was necessary to perceive from the perspective of an organism and hyperorganism simultaneously, without either view erasing or dominating the other. Abundant access to VR-like experiences means that we can always explore life in new ways, and thereby put human and non-human life in deeper connection—which is, finally, putting us in deeper connection with ourselves.

To further emphasize these points, let us turn to what might be termed our "in-built" platform for transformative experiences: our dreams. Dreams, like VR, have the potential to open us up to experiences outside the constraints of ordinary life, and tend to express valuable information about our Shadow.

Edward Edinger: *"In analyzing such a dream the first thing that one has to determine is the nature of the conscious attitude that is constellating a dark and menacing response from the unconscious."511*

Carl Jung: *"No one doubts the importance of conscious experience; why then should we question the importance of unconscious happenings?… Dreams may give expression to ineluctable truths, to philosophical pronouncements, illusions, wild fantasies, memories, plans, anticipations, irrational experiences, even telepathic visions, and heaven knows what besides… Dreams give information about the secrets of the inner life and reveal to the dreamer hidden factors of his personality."512*

Dreams are one of the most common and easily accessible portals to an imaginal, symbolic realm that can either complement or consume other domains of life. And lucid dreaming, as in becoming aware that you are dreaming and being able to exert influence over it, is an especially apt analogy for existence in metaxy, the domain of souls. Jung's work has led to countless

instantiations of "active imagination", which may well be compared to lucid dreaming in its function of connecting reality to itself.

Owen Barfield: *"There is a certain kind of nocturnal dream, in which we dream with one part of ourselves, and yet at the same time we know with another part that we are dreaming. The dream continues, and is a real dream (that is, it is not just a waking reverie)… We are there outside the dream, as well as being within it. I think we may let ourselves be instructed by such dreams in the nature of true vision. Poets have sometimes been called 'visionaries' and sometimes 'dreamers'; but they are likely to be poor poets unless it is this kind of dream we are connoting when we use the word. Poetic imagination is very close to the dreaming of such dreams, and has little to do with reverie."[513]*

Jeffrey Raff: *"Moreover, the imagination creates what Jung termed the 'transcendent function,' through which profound changes in the Self occurs… Learning from and applying the messages of our imaginal experience creates changes in attitude, behavior, and even states of consciousness… Thus, imagination is the central force in the process of individuation and psychological wholeness."[514]*

Joan Chodorow: *"Jung's therapeutic method had many different names before he settled on the term 'active imagination'. At first it was the 'transcendent function.' Later he called it the 'picture method'…[or] 'active fantasy'… Sometimes the process was referred to as 'trancing,' 'visioning,' 'exercises,' 'dialectical method,' 'technique of differentiation,' 'technique of introversion,' 'introspection,' and 'technique of the descent.' In the deepest sense, active imagination is the essential, inner-directed symbolic attitude that is at the core of psychological development."[515]*

Mark C. Taylor: *"Since the imagination is what it is by becoming other than itself, it constantly 'strives,' 'hovers,' 'oscillates' between opposites it simultaneously brings together and holds apart."[516]*

Mark Dotson: *"[So it can be compared to] the Platonic metaxy, the place of Soul, that intermediate region between contrarieties. This is the state of being that is ruled by Hermes."[517]*

Owen Barfield: *"[Hermetic] imagination does not disregard [this] gap; it depends on it. It lives in it…as a rainbow spanning the two precipices and linking them harmoniously together."[518]*

Mark Dotson: *"[And so, Hermes] has been called, by Edward Edinger, the patron god of depth psychology, because of the depth psychologist's concern with mediating consciousness and unconsciousness. It is in this place that Soul dwells, and Hermes is the Guide of Souls, the Psychopomp."[519]*

James Hillman: *"[Tragically,] we have lost [this] third, middle position which earlier in our tradition, and in others too, was the place of soul: a world of imagination, passion, fantasy, reflection, that is neither physical and material on the one hand, nor spiritual and abstract on the other, yet bound to them both."[520]*

The worlds of virtual realities and dreams can be seductive—becoming our reality instead of transforming our relationship to it. The less healthy forms of transformative experiences essentially dissociate us from reality rather than placing us in empathetic connection with it. In other words: Beware self-transcendence which makes you forget yourself or your duties in life; avoid transcending out of reality, and aim instead to be transformed towards a deeper relationship with it. Having given this precaution, dreaming (whether lucid or not) has much to offer. Dreaming is the kind of experience which informs our view of the quest for immortality: that reciprocal dance between symbols which express the emanation of the Good and the emergence of meaning.

Carl Jung: *"There is a thinking in primordial images—in symbols which are older than historical man—which have been ingrained in him from earliest times, and, eternally living, outlasting all generations, still make up the groundwork of the human psyche."[521]*

D.C. Schindler: *"One who 'reads' a symbol, then, does not simply record the information it indicates, but instead enters into the symbol; he is assimilated to its essentially latent sense, so that he can be said to 'in-dwell' the meaning and 'live' in it. To the extent that he does, the meaning becomes transparent to him, even while it remains resistant to complete conceptual translation."[522]*

Ira Progoff: *"The infinity of the universe encompasses man. It excites his wonder, but it eludes his knowledge. Nonetheless, some quality of its infinity seems to be part of the nature of the human being. It is present in him as the equivalent in human form of the creative principle that pervades the universe. It expresses the kinship of man to the rest of creation. The psyche with its reflecting faculty acts as a mirror for the principles by which the infinity of the universe disperses itself and becomes finite in particular forms and patterns."[523]*

J.E. Cirlot: *"In symbolism, everything has some meaning, everything has a purpose which at times is obvious, and at others less so, and everything leaves some trace or 'signature' which is open to investigation and interpretation… Seen in this light the universe is no longer sealed off, nothing is isolated inside its own existence: everything is linked by a system of correspondences and assimilations. Man in early society became aware of himself in a world wide open and rich in meaning. It remains to be seen whether these 'openings' are just another means of escape or whether, on the other hand, they offer the only possible way of accepting the true reality of the world… [Many] base symbolism upon the incontrovertible equation macrocosm=microcosm. For this reason René Guénon points out that: 'The true basis of symbolism is, as we have said, the correspondence linking together all orders of reality, binding them one to the other… By virtue of this correspondence, the whole of Nature is but a symbol.'"[524]*

E.L. Grant Watson: *"[So] our task is to enter into the dream of Nature and interpret the symbols."[525]*

Carl Jung: *"[And] it is only possible to live the fullest life when we are in harmony with these symbols; wisdom is a return to them."[526]*

In our present world, in the midst of a metacrisis which contains a crisis of meaning and loss of viable worldviews, avenues of escape from this predictably dreadful reality are likely to capture our attention. That doesn't mean our goal is to escape reality; on the contrary, our goal is to understand what makes these "other" realities so appealing and transformative, and develop a dynamic unity between these potentially oppositional realms.

It could even be that a dream-based spark of sacredness could precede the development of full illumination in our daily lives—that initial glimpse

being sufficiently enticing to make us venture out into the sunlight outside a dark cave. Dreams, at their finest, can be mystical, spiritual, self-transcending, transformative experiences which leave us more deeply in love with life.

Victor Frankl: *"What is most striking in such dreams is an ecstatic experience of bliss that was unknown…[in] waking life."*[527]

Stepping outside of ourselves and our waking reality, being able to immersively experience another life, being less constricted by the limits of the physical world: These are aspects of transformation that we can't ignore.

Taken together with the view of immortality as unlimited lifespan and healthspan, the kinds of experiences hinted at here give us insight into a life which is not just endless, but endlessly meaningful. Immortality, in this view, is the quest to make accessible and abundant the transformational experiences which lovingly connect us with every region of reality. The following sections shed further light on this quest to become fully ourselves—to reciprocally transform and be transformed by the world, each other, and the Good itself.

Shamanism

Shamanism is a general name given to the world's most ancient body of transformational practitioners and heuristics. It seems that the quest for immortality, as an endless seeking of self-actualization, self-transcendence, and spiritual perfection, was taken up by even the earliest humans.

Ken Wilber: *"The states of awareness that constitute meditative states, or Enlightenment states, or Awakening states, or other types of 'peak experience' states—these have been seen, known, and understood by humans for thousands and thousands of years, going back at least fifty thousand years to the first great shamans, who, in their vision quests, explored 'altered states of consciousness' that were the forerunners to enlightenment or awakening experiences."*[528]

We are giving transformation our full attention because it is the name for any fundamental change of selfhood in any center of action, including monads, people, planets, and much in between; or, in other words, a profound change in the ordered complexity of a monadic plenum. Transformation, enlightened by the Good, can be a countervailing force in relation to the

meaning crisis that was revealed near the beginning of this book. Beyond that immediately urgent crisis, the commonalities of transformation in all domains will be explored here—such that we will arrive at broad metarevolutionary principles of action.

The quest for immortality, the mythological mirror-image of our endless efforts to actualize the Good, is movement towards perfection. And it is through the transformational work of shamans that metarevolutionaries see a piece of the solution to our "loss of soul"—an increasingly zombie-like, depersonalized society.

Patrick Harpur: *"The primary cause of illness in traditional societies is 'loss of soul'. Here, the word 'soul' refers to what we think of as our sense of ourselves, our ability to say 'I'… Westerners are not so prone to loss of soul in this sense. Our egos are not at all fluid and vulnerable; nor are they susceptible to getting lost in the Otherworld. Our problem is the reverse: we lose the Otherworld… We lose the dimension of imagination which gives depth, color, connection and meaning to our lives. In extreme cases we suffer from a condition which psychology calls depersonalization… It is like a vision—but one in which the world becomes 'weary, stale, flat, and unprofitable', as Hamlet perceives it… It was like St. John of the Cross's Dark Night of the Soul, when the suppliant feels the remoteness of God and the waste of the world. The depersonalized individual no longer recognizes himself as a personality. He observes his own actions as if from outside, an onlooker to himself. He is not depressed exactly; rather, he suffers from that deadness, emptiness, apathy and sense of monotony for which dryness is the most apt metaphor. Loss of soul is also loss of world-soul, so that he is not only estranged from himself, but also from the world, which seems alien and unreal."*[529]

We can go no further in discussing immortality, which is a forceful rejection of our meaning crisis, without understanding shamanism—particularly from the point of view of present-day cultures which have lost touch with the Otherworld. When domains of reality are severed from each other, the result, as we've said, is a Flatland; the result is prisoners who never leave the cave; the result is zombies.

Metarevolutionaries need worldviews which inclusively value these modes of seeing/being—for example, combining the imagination of shamans, the rigorous methods of science, and TED (Transformative Experience Design) technologies—leading to a new generation of metamodern shamans. As we will see in other areas of the quest for immortality, our task is to create a comprehensive paradigm of transformation while situating it in a world and worldview that is willing and able to harmonize diverging orientations, such as the shamanic and scientific. The philosopher who leaves the cave must be welcomed when he returns, instead of being shamed or ignored or killed.

Jordan Peterson: *"The widespread practices and viewpoints of shamanism constitute a cohesive philosophy, so to speak, embedded 'unconsciously' in behavior and image. This ritual philosophy comprises a set of observations about the nature of radical personality transformation, and a set of practices designed to bring such alteration about. Shamanism is devoted to furtherance of the possibility of qualitative improvements in 'consciousness' or general adaptive ability… Shamanism is prototypical of those religious practices designed to modify human behavior and interpretation—to induce and regulate the processes of spiritual reconfiguration… Shamanic rituals are therefore not merely anachronistic, without modern relevance, except as curiosity dictates—but prime exemplars of a process we must come to understand… The shaman's success at completing the journey 'from earth to the domain of the gods' allows him to serve the role of psychopomp, intermediary between man and god; to aid the members of his community in adjusting to what remains outside of conditional adaptation, when such adaptation fails. The shaman therefore serves his society as active intermediary with the unknown; as the conduit…through which the unknown speaks to man; as the agent through which the information which compels adaptive change flows. It is important to note that the shaman's journey into 'unknown lands' must be bounded by return to the community for the voyage to be of value. Otherwise, the prototypal ecstatic experience—central to the shamanic vocation (and to creative thought and action in general)—is mere insanity; will be regarded socially and experienced intrapsychically as such."[530]*

The quest for immortality can never be entirely individual; it needs, and has always needed, to be embedded within a world and worldview which can coherently integrate the often-shocking insights of atypical individuals. The shamanic state of ecstatic inspiration is little-understood in much of the world today, and yet we need it now more than ever. This aspect of our quest for immortality is all about transformational "awakening",[531] which is movement away from the dreamless sleep called "meaninglessness".

Carol P. Christ: *"'Awakening' is a metaphor that mystics and seekers frequently use to describe the experience of enlightenment—the movement from conventional notions of the meaning of life to a more direct experience of the 'really real' or ground of being, from ordinary to extraordinary consciousness, from bondage to freedom."*[532]

The Many Names of Transcendence

Peak Experience
Religious, Spiritual, and Mystical Experiences (RSMEs)
Clear Light
Cosmic Consciousness
Deautomatization
Fana
Mystical Union
Flow Experience
Optimal Experience
Elevating Experience
God Experience
Intensity Experience
Inward Light
Living Flame of Love
Love-Fire
Numinous Experience
Objective Consciousness
The Peace of God, which Passeth All Understanding
Samadhi
Satori
Shamanic Ecstasy
The Silence Beyond Sound
Subliminal Consciousness

Credit: "Transcend" by Scott Barry Kaufman

And one word, more than any other, describes this shamanic method of "awakening" or transformational experience: Ecstasy. And its etymology, "to be outside of oneself", enlightens us to a core theme of the shaman's role in the quest for immortality.

Patrick Harpur: *"The otherworld journey takes place in a trance or 'ecstasy', from the Greek 'ekstasis', implying something which makes you 'stand outside' yourself. It referred to any state of awe, stupefaction, hysteria or diabolic possession."[533]*

In a state of ecstasy, the shaman is using "sight" that is different from everyday seeing. It may be closer to the experience of immersive VR, dreaming, or active imagination than it is to literal sight. It is something which glimpses "hidden" areas of reality, spanning and meaningfully connecting disparate domains. The goal, in the shaman's case, is to use these transformative experiences in service of healing a troubled mind or a troubled society in a time of need.

John R. Haule: *"The world over, wherever shamanism is found, there are individuals with a special talent for deliberately passing into an ecstatic trance in order to gain access to a very similar state of unity with nature and with their patient that lovers know with one another."[534]*

As such, it is implied that if we are cut off from shamanism, then the valuable information revealed in their ecstatic "journey to the Otherworld" remains hidden. Being oriented towards an abundance of ecstatically transformational affordances, therefore, means reaching towards the farthest edges of our personal and collective potential; it means putting ourselves on the road to immortality; and it means following a metarevolutionary path which puts us in the best position to respond appropriately to any metacrisis at any time.

Michael Harner: *"Why, then, is shamanic knowledge so basically consistent in different parts of the primitive world? I suggest that the answer is, simply, because it works. Over many thousands of years, through trial and error, people in ecological and cultural situations that were often extremely different came nonetheless to the same conclusions as to the basic principles and methods of shamanic power and healing. Shamanism flourished in ancient cultures that lacked the technological innovations of modern medicine. In my*

opinion, the low technological levels of those cultures compelled their members to develop to the highest degree possible the ability of the human mind to cope with serious problems of health and survival.”[535]

The shamanic trance is a state of intimacy with absoluteness—which shamans call the "Otherworld", and which we can, naturalistically, call the Good. Remember, this is only a separate world symbolically and mythologically; possibility and actuality (the absolute and relative) are more like two sides of a single coin. The Good is "beyond" and yet it is here; there is, as Iris Murdoch said, *"nowhere else"*.[536]

Mircea Eliade: *"Shamanic ecstasy is less a trance than a 'state of inspiration'; the shaman hears and sees spirits; he is 'carried out of himself' because he is journeying in ecstasy through distant regions, but he is not unconscious. He is a visionary and inspired.”*[537]

Patrick Harpur: *"Methods include fasting, prayer, pain, drugs, disease, music, chant and meditation in order to induce trance, possession, ecstasy, vision.”*[538]

Hermann Hesse: *"Music, like the dance and every other artistic endeavor, was a branch of magic, one of the old and legitimate instruments of wonder-working. Beginning with rhythm (clapping of hands, tramping, beating of sticks and primitive drums), it was a powerful, tried-and-true device for putting large numbers of people 'in tune' with one another, engendering the same mood, co-ordinating the pace of their breathing and heartbeats, encouraging them to invoke and conjure up the eternal powers, to dance, to compete, to make war, to worship.”*[539]

Patrick Harpur: *"Those who have a talent, or even a vocation, for such states are called mystics, poets, mediums, witch-doctors and shamans. But…everyone needs some contact with the Otherworld, whether through dreams, imagination or vision, because such contact is essential to that initiation without which our lives are not in the fullest sense lived.”*[540]

Scott Barry Kaufman: *"What was cognition like in the throes of the peak experience, these 'transient states of absolute Being'? Maslow outlined seventeen characteristics, including: complete absorption; richer perception; disorientation in physical time and space; intrinsic reward of the experience; ego transcendence; dichotomy transcendence; momentary loss of fears,*

anxieties, and inhibitions; greater acceptance and forgiveness of oneself and others; heightened aestheticism, wonder, awe, and surrender; fusion of the person and the world."[541]

Revised 30-item Mystical Experience Questionnaire (MEQ30)

Factor 1: Mystical

Internal Unity

Feeling that you experienced eternity or infinity.

Freedom from the limitations of your personal self and feeling a unity or bond with what was felt to be greater than your personal self.

Experience of pure being and pure awareness (beyond the world of sense impressions).

Experience of oneness in relation to an "inner world" within.

Experience of the fusion of your personal self into a larger whole.

Experience of unity with ultimate reality.

External Unity

Experience of oneness or unity with objects and/or persons perceived in your surroundings.

Experience of the insight that "all is One."

Awareness of the life or living presence in all things.

Noetic Quality

Gain of insightful knowledge experienced at an intuitive level.

Certainty of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really real at some point during your experience.

You are convinced now, as you look back on your experience, that in it you encountered ultimate reality (i.e., that you "knew" and "saw" what was really real).

Sacredness

Sense of being at a spiritual height.

Sense of reverence.

Feeling that you experienced something profoundly sacred and holy.

Factor 2: Positive Mood

Experience of amazement.

Feelings of tenderness and gentleness.

Feelings of peace and tranquility.

Experience of ecstasy.

Sense of awe or awesomeness.

Feelings of joy.

Factor 3: Transcendence of Time and Space

Loss of your usual sense of time.

Loss of your usual sense of space.

Loss of usual awareness of where you were.

Sense of being "outside of" time, beyond past and future.

Being in a realm with no space boundaries.

Experience of timelessness.

Factor 4: Ineffability

Sense that the experience cannot be described adequately in words.

Feeling that you could not do justice to your experience by describing it in words.

Feeling that it would be difficult to communicate your own experience to others who have not had similar experiences.

Stratford Caldecott: *"It is something like coming home, but only at the end of a long journey. In a word, I suppose, it is the glimpse of transcendence, of what it might mean to go beyond all limitation, outside time itself perhaps, into a place where beauty converges and commingles with goodness and truth."[542]*

In a state of ecstasy, our patterns of thought and action which become ingrained through daily life are transformed; the shaman's patterns of consciousness, like mythological heroes, venture into the undifferentiated absolute and return reborn and repatterned. This is one of shamanism's important teachings we must carry with us if we wish to come into contact with parts of our inner and outer worlds which are ordinarily inaccessible. And this is why we have said that transformation, a relative and immanent unfolding of actuality, is always attached to (in love with) some object of absolute possibility. For transformation to love anything but the Good itself (to be oriented to something other than perfection and immortality) is nihilistic. This is equivalent to saying that all transformations are energy transformations (unfolding as quantized actions in the process of free-energy minimization), but that the first principle of transformation is not energy—rather, the Good is its metaphysical grounding. Action undergoes endless transformations in worlds which come to resemble the Good in varying degrees of perfection.

Transformation is the process of painting the best of all actual worlds from a palette of possible colors. And shamanic ecstasy is one of the most time-tested and consistent tools for forming a bridge between the domains of possibility and actuality. Thus, by integrating shamanism into our metamodern worldviews, our metarevolution is oriented towards the inexhaustible goal of actualizing beauty, wisdom, and perfection in centers of action at every scale of existence.

Patrick Harpur: *"For the way we see the world can restore its soul, and the way the world is ensouled can restore our vision… I wonder whether we have even an inkling of how our lives might be if our momentary contacts with the Soul of the World—those little flashes of truth and beauty—were to become as continuous as the air we breathe."[543]*

This is what we must ponder in order to understand why we should pursue immortality. Shamanic ecstasy is one of those portals to transformative

experiences—a tool for growth, insight, inspiration, imagination, and wisdom —which is required to shape life, from all perspectives, into an increasingly magnificent expression of the Good. Let's continue to explore what it can offer in the present quest for immortality. How does it relate to our meaning crisis, metacrisis, and our goals as metarevolutionaries?

Like shamans, the accumulated patterns of actuality must experience death and rebirth—dissolution and coagulation. Everything that is spiritually enlightened by something sunlike must also experience the divine lunacy of something moonlike. So we have been exploring the shamanic form of ecstasy which may be called a "healthy madness", in contrast to insanity. It is (we will see) the sacred union of opposites symbolized by Apollo, Dionysus, and their mediator: Hermes. We can say for now that as humans, each of these mythological gods represent real aspects of transformational experiences. Shamans, like Hermes, mediate between possibility and actuality, absolute and relative, and much else.

Plato: *"Our greatest blessings come to us by way of madness [mania]."*[544]

D.C. Schindler: *"The ecstatic character of Platonic love is specifically what qualifies it as a divine madness. It is by nature a 'gift from the gods', precisely because it is elicited from beyond the merely relative, that is, it breaks in on one essentially from 'the beyond.' And it is a madness because, rooted in the absolute and in-itself goodness of things, it cannot ultimately be justified, and thus explained, by anything beyond itself."*[545]

Michael Harner: *"Although the Greeks did recognize an ordinary kind of mania, caused by organic disease, [ecstatic] madness is not…'mental illness' to which we should apply medicine… The psyche can never be wholly free of madness or its possibility… [And] if the denial of divine madness leads to insanity, so, conversely, the cure for insanity is to convert it into madness, which is initiatory. It destroys the ego and the literalism that holds the madness in thrall to insanity, and connects us back to the gods."*[546]

The result, as Anacreon once wrote, is to be *"mad with the sting of love."*[547] It is through this good, transformative mania through which shamans journey, and from which they return as healers of the world.

Michael Harner: *"[This means that] shamans are people of action as well as knowledge. They serve the community by moving into and out of a hidden reality when asked for help."[548]*

Apollo & Dionysus

"The philosopher F. W. J. von Schelling introduced the distinction (made famous by Nietzsche) between 'Apollonians,' who favor logic, the analytical approach, and a dispassionate weighing of evidence, and 'Dionysians,' who lean more toward intuition, synthesis, and passion."

- Murray Gell-Mann

Credit: "Apollo with Lyre" by Dennis Jarvis

"Apollonic insanity...might consist of oneness at all costs (a-polio = 'not many')... leading to paranoia, which sees the same hidden cause behind all events, and to monomania."

- Patrick Harpur

Credit: "Dionysus brings Hephaestus, god of fire" by New York Public Library

"The Dionysian madness that would liberate us temporarily from our individual prisons and pent-up feelings might abolish individuality altogether and manifest itself in 'collective hysterias' or dangerous mobs."

- Patrick Harpur

In order to better understand the connection between the shamanic methods, ecstasy, and immortality we can reflect on the Greek "Mysteries of

Eleusis" and its mythological counterpart in the story of Demeter and Kore (or Persephone). The most important lesson to be drawn is that for transformation to be successful, we need a coherent system instead of a mere "heap" of unrelated parts. Eleusis demonstrates that elements of transformation such as symbols, myths, rituals, worldviews, and social institutions must come together in one artfully entangled complex of spiritual discovery and renewal.

Brian Muraresku: *"Before Jerusalem, before Rome, before Mecca, there was Eleusis. If Athens of the fifth and fourth centuries BC was the true source of Western life in the twenty-first century, then Eleusis was our first, undisputed spiritual capital."*[549]

It was at Eleusis that the Greeks hoped to make ecstatic transformation more abundant, and make culture, therefore, more enlightened. Though ecstatic practices, as we saw, have ancient shamanic origins, it is worth considering how it was culturally situated in the world and worldview of Ancient Greece (and in Eleusis, more specifically).

R. Gordon Wasson: *"Ecstasy! The mind harks back to the origin of that word. For the Greeks 'ekstasis' meant the flight of the soul from the body. I am certain that this word came into being to describe the effect of the Mystery of Eleusis."*[550]

What is perhaps most interesting is not that Eleusis existed, but that it was venerated.

Zosimos of Panopolis: *"The life of the Greeks [would be] unlivable if they were prevented from properly observing the most sacred Mysteries, which hold the whole human race together."*[551]

Mara Lynn Keller: *"The Mysteries at Eleusis…lasted almost two thousand years, from approximately 1450 BCE to 392 CE… The story of both the Mother and Daughter constellates the center of the Greater Mysteries, serving as chrysalis and catalyst for the initiates' spiritual illumination and transformation… Initiates participated in a reenactment of the mythos or sacred story of Demeter and Persephone… The myth and the rites are closely intertwined."*[552]

Richard G. Geldard: *"The purpose of the ceremony, then, was not so much to invoke an epiphany of the goddess within the ceremonial space, but rather to induce an internal epiphany in the participant, to recreate the myth*

of Demeter-Kore for the individual. The myth is based on the story of the two goddesses, Demeter, or Mother Earth, and Kore, the Maiden, also known as Persephone, goddess of the underworld and wife of Hades."[553]

What we are beginning to glimpse in Eleusis is a unification of personal and communal transformation. One participates as an individual seeking transformation, but the experience as a whole happens not only within one's literal community, but in community with the symbolic and mythological domains. One is living a personal instantiation of something eternal. The choice of gods (who in this case represent principles of transformative potentials) is important, and in the Demeter-Kore myth we see more evidence that mediation of opposites is a central task in the quest for immortality.

Richard G. Geldard: *"Demeter is the Olympian spirit of the earth, a force of conscious spiritual power. Hades is an underworld god, king of the dead, keeper of souls, a symbol of subconscious power, but as brother to Zeus is still a spiritual force. Persephone is the innocent maiden abducted to the underworld against her will. She is a savior of mortals, queen with Hades and yet virgin (pure spirit) on Olympus, where she lives eight months of the year with her mother. Her return is the affirmation of immortality possible in the purified soul of a human being. The second theme of importance in the Mysteries is the initiation ceremony and its spiritual significance. Here the themes of spirit (consciousness), earthly desire (subconsciousness), repression (separation and denial), and sublimation (transforming subconscious desire into consciousness) are played out in the myth. Persephone is innocent earthly desire, attracted to the sensuous narcissus and swept underground to marry Hades (repression). If she eats the food of death (the pomegranate provided by Hades), she will forever repress her desires and become captive to them, unable to transform them into conscious spirit. Because she represents the human condition in this myth, Persephone eats a seed from the pomegranate taken from Hades' orchards and appears condemned. She has something within her that must be sublimated and transformed. Demeter represents spirit unblemished by earthly desire, which has the power of transformation."*[554]

It is one thing to have a transformative experience which casts you out to the fringes of society, and quite another to come together in a supportive,

dynamic community of transformation. Combining what we've learned about shamanism with the significance of Eleusis for Greek culture, the hope is to demonstrate the synergy which occurs in the confluence of personal participation in transformation, cultural (institutional) support of transformation, and the coevolution of the myth-symbol-ritual complex which depicts and enacts transformation.

Metaphysical, ontological, epistemic, and ethical changes

Symbolic, mythic, narrative, and dramatic changes

Transformation

Institutional, technological, political, and economic changes

Game structure, rule, strategy, and incentive changes
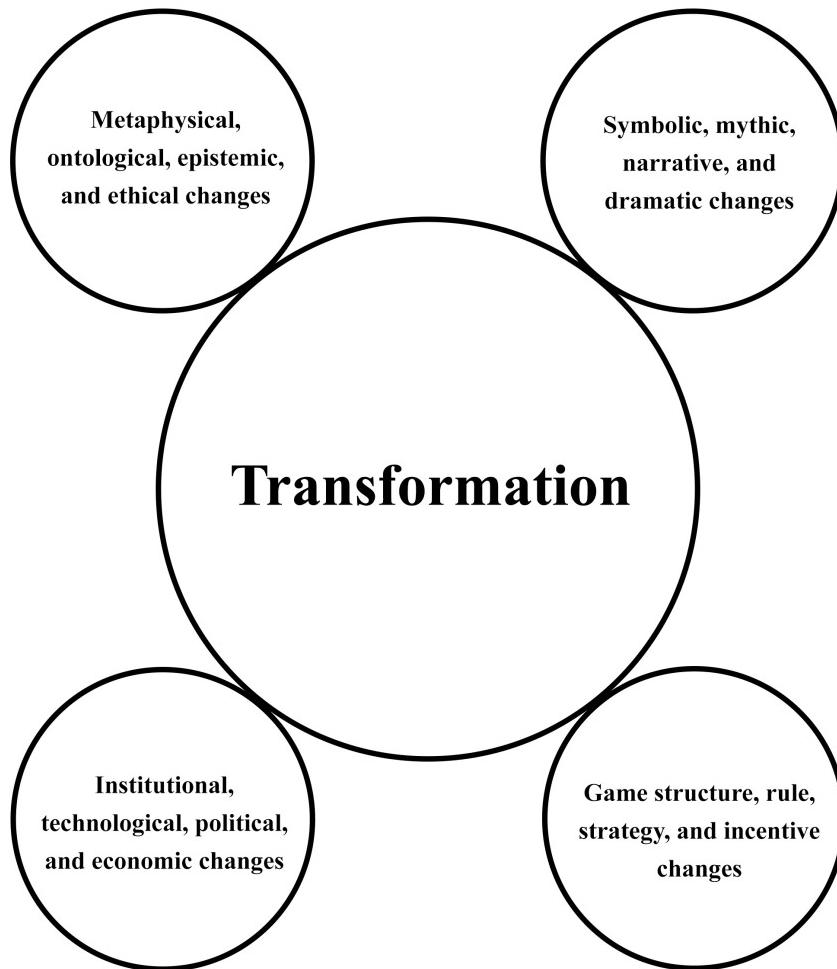
To restate it: We need people to value and participate in transformative experiences; we need cultural (worldview) support of transformation, along with its integration into institutions of education, religion, and government;

and we need gamified conditions whose landscape of choices and incentives tends towards the creation of mythological-symbolic maps of transformation; which, altogether, cuts through immortality's ineffability and patterns our actuality with transformational affordances. That is the kind of "full circle" of transformation of which Eleusis was a key part, and why there was such deep appreciation for its cultural significance.

This profound respect for the Eleusinian Mysteries was widespread, and the conspicuous absence of a metamodern Eleusis is undoubtedly a factor in our meaning crisis and metacrisis in general. We are missing an important subsystem in our transformational metasystem. Our metarevolution must therefore be oriented towards the rebirth of something analogous to a culturally and mythologically-supported transformational experience, such as was found at Eleusis. This would be a place where a 21st-century human with a scientific, complex systems-informed worldview can participate in the quest for immortality with no internal discontinuity of beliefs: One is a value-bearing metasystem of action quanta, transforming energy in more or less perfect ways, and learning to perfect the moral art of transformation.

There are specific parts of the Eleusinian Mysteries which may or may not be suitable for the metamodern era. We will need symbols and myths which are uniquely suited to, and emerge from, our present moment. And we may be able to learn lessons from older myths, such as the one about Demeter and Kore, but may ultimately need our own culturally-relevant myths. Another interesting aspect of Eleusis which deserves consideration is a drink called "kukeon".

Brian Muraresku: *"Like all travelers, Plato was permanently transformed by whatever he observed in Eleusis. The latest in a long line of visionaries, men and women, with exclusive access to cosmic truths. Following their sip of an unusual elixir called the kukeon, and a night of spectacles in the temple, each pilgrim earned the honorary title epoptes, which means something like 'the one who has seen it all.' Beyond any doubt, they claimed, death was not the end of our human journey. We do, in fact, survive the physical body. And underneath this mortal clothing, we are all immortals in disguise—gods and goddesses destined to the stars for eternity… Under the*

visionary spell of the kukeon, Persephone is thought to have revealed the mystery of death and rebirth directly to the initiates."[555]

The "kukeon" we now know, was likely an alcoholic drink spiked with other chemicals—notably ergot derived from barley, which is the natural ingredient from which the hallucinogenic drug called "LSD" is derived. For the Greek Mysteries of Eleusis, "popular enlightenment", or the open, abundant access to transformative experiences, was the goal. And they were interested in using a combination of myths, symbols, rituals, and drugs to get there. It's unknown if something like this could find a home in today's society, but all of these elements can be valuable. Psychoactive plants can be (and have been) used to make transformational experiences more abundant. But these substances need to be situated in a meaningful worldview (contextualized and legitimated by society and simultaneously developed in its mythological-symbolic form), or else they will be sources of insanity rather than sacred mania.

Martin Shaw: *"The use of lysergic acid caused previously imagined psychological limits to dissolve in minutes… With this wrenching of 'conventional' consciousness, hundreds of thousands of people poured down the hole of initiatory experience without…understanding where they were going. Many return, some don't… The '60s created a generation with the aspirations of magicians without the elders, boundaries and community to give their apprenticeship grounding."*[556]

To recapitulate, the metarevolutionary quest for immortality explored so far has to do with the union of inner and outer transformation. This happens both in a slow and steady development, a ripening of souls, and in moments of powerful, nonlinear transformational changes to intermonadic relationships. This implores us to find new areas of consilience between the dangerously fragmented "specializations" of the modern world. Thus we explored the ancient history of shamans, who were not distinctively doctors, psychologists, metaphysicians, scientists, or priests, but rather a synergistic blend of these truly inseparable vocations. Further, it was asserted that dreams, technology, active imagination, and ecstasy are doorways to transformational experiences, and must be considered as essential elements in our quest for immortality. All of this does not happen in isolation; instead, transformation has cultural,

institutional, mythic, symbolic, and ritual components which must all be harmonized together.

Keeping this all in mind, we can now move further in our quest for immortality by way of alchemy, whose transformations have a trajectory of "gold"—a symbol which implies a life devoted to wisdom, enlightenment, and the perfection of every monad within our spiritual plenum.

Alchemy

The quest for immortality embodies optimism. Optimism holds that value is real and discoverable. And the quest for immortality conveys the thermodynamically constrained moral duty to apply free-energy minimization in service of transforming possible value into actual perfection. So let us move forward with our exploration of depth and development, which are the two faces of transformation, and see how we may understand and access the transformational experiences which form a punctuated equilibrium in the evolution of the Good.

This may seem a strange place to start if you assume that alchemy is (or was) proto-chemistry. We shall see, however, that it is closer to a language, art, and science of transformation than it is to modern chemistry. And, because of this, it forms another essential piece of our quest for true immortality.

So: How does one "do" alchemy? If "laboratory" alchemy is but one instantiation of a philosophical system whose goal is the perfection of all things, where else might the actual practice of it take place? To understand alchemy in its broader sense, let us quickly go over its core structure. Alchemy is:

- A symbolic language and science of transformation.
- The art of discovering the self-similarity of all things. Early alchemists were involved in chemical experimentation in order to gain insight into the common principles of all transformations. The belief was that studying and meditating on the transformations of chemicals and metals would reveal facts about transformations in all domains. This is its microcosm-macrocosm principle, where the "little world"

of the laboratory is like the "big world" of nature. Every scale of reality is mutually revelatory.

- Closer to shamanism (the mastery of ecstasy) and depth psychology (particularly "shadow work" and active imagination) than it is to chemistry. Chemical and metallurgic transformations are but one "allegory" for potential transformations in humans, nature, or the universe as a whole. It might also be compared to eco-psychology and panpsychism, because it rejects the hard boundaries drawn by many of today's worldviews which form a schism between Man and Nature.

- A practice which seeks immortality, which can be seen in the maturation of gold from other metals, and the maturation of the Self in minds. That is, it is formed on an optimistic metaphysics and a (potentially) naturalistic *telos*. It is oriented towards the inherent value and potential perfection of all things.

- An esoteric practice which has historically been tied to exoteric practices like Christianity. In other words, it is a "depth" or "soul" practice which complements a "developmental" or "spiritual" practice.

- A practice whose main "products" are symbols. The separation, combination, and transformation of chemicals is symbolic of change in all domains; thus, the true outputs of alchemy are symbols which represent the common principles of transformation, and the analogical connections between them.

- A way to participate in the universe falling in love with itself.

In short, alchemy teaches that an alchemist (philosopher) and the Philosophers' Stone are one and the same: Object and agent of transformation. Creating "gold" in material carries secrets about the developmental individuation of the Self. This makes alchemy the active endeavoring of Action to become the perfect image of the Good; it is the monad's striving to represent Monas Monadum; a striving to become a more whole, enlightened, and perfected individual in an increasingly wise and beautiful world—that is the true goal of alchemy.

Patrick Harpur: *"Modern science has assumed that alchemy was a primitive form of chemistry, doomed to failure because of its 'impossible' aim*

of making gold. But true alchemists always insisted that their aim was precisely not 'common gold' but 'philosophical gold'.[557]

H.J. Sheppard: *"[Therefore, alchemy is] the art of liberating parts of the Cosmos from temporal existence and achieving perfection which, for metals is gold, and for man, longevity, then immortality and, finally, redemption."*[558]

Bettina L. Knapp: *"[It is] a science, psychology, and a metaphysics."*[559]

Carl Jung: *"[And it is] one of the great human quests for the unattainable."*[560]

Patrick Harpur: *"The Opus, in other words, provided an archetypal model for what Jung called the central concept of his psychology: the process of individuation. The goal of individuation (over the course of a lifetime) was a union of consciousness with the unconscious—a union in fact of all the psychic opposites in the Self... Jung doubted that it was possible to accomplish the Self. It was a hypothetical goal, a kind of psychic wholeness for which the Philosophers' Stone...seemed an apt symbol... [Similarly,] the Secret Fire of the Philosophers, as the alchemists called themselves...extends far beyond alchemy. It was a secret that was passed down from antiquity—some say from Orpheus; others, from Moses; most, from Hermes Trismegistus—in a long series of links which constituted what the Philosophers called the Golden Chain. This august succession of Philosophers embodied a tradition which we have either ignored or labelled 'esoteric', even 'occult'; but it continues to run like a vein of quicksilver beneath Western culture, rising up out of the shadows during times of intense cultural transition."*[561]

Wayne Shumaker: *"As defined fairly typically by Giordano Bruno... the magus was, first of all, a person learned in the wisdom possessed by the followers of Hermes Trismegistus among the Egyptians, the Druids among the Gauls, the gymnosophists or naked philosophers among the Indians, the Cabalists among the Hebrews, the magi among the Persians, the sophoi or wise men among the Greeks, and the sapientes or knowing ones among the Latins."*[562]

R.A. Schwaller de Lubicz: *"[So we conclude that] the Three Wise Men (Magi) of the Gospel and Hermes Trismegistus are related to this true magic (creative magic) of spiritual action, at the right moment, in the right setting. This magic is the essence of Harmony, Justice, and Beauty."[563]*

What, then, is an alchemist's goal?

Gerard Dorn: *"Transform yourselves into living philosophical stones!"[564]*

Put another way, an alchemist is a revolutionary/hero outwardly transforming the world, but he is also, himself, the object of the transformative quest. Alchemy is an inward, psychological, moral, epistemic, spiritual transformation which concurrently transforms the world in these very same ways. Paraphrasing a famous alchemist, Michael Maier: the Sun is a microcosm of the Good within our solar system; gold is a microcosm of the Sun within Earth, and the heart is a microcosm of gold within Man.[565] And Leibniz would add that every monad is *"big with the future"[566]* as it tends towards the perfection of gold—symbol of the Good itself.

Jordan Peterson: *"Gold, as ultimate contrast to mere base matter, was the ideal, as it could be perceived in the concrete world… Gold has always been associated, in episodic representation, with divinity… Gold, in contrast to 'lesser' metals or substances, does not tarnish, dull or rust. It therefore appears imperishable, 'immortal' and incorruptible. Gold is rare, rather than common. It shines like the sun, the evident source of life. The 'category' of gold therefore tended to subsume everything Apollonian, sunlike, divine… Broadly speaking, the alchemist wanted to transform every subordinate element in the category 'matter' (the unknown, fallen, corrupt world, including man as 'material' being) into the category 'gold' (the Apollonian, spiritual, sunlike, incorruptible state). He was searching for a transformative agent to bring about that change (the lapis philosophorum); but also viewed himself as that agent (since he was integrally involved in the transformative opus of alchemy)."[567]*

Ira Progoff: *"The metaphor that is most appropriate here is that of the seed. In the seed there is the latent potentiality of development that carries all the possibilities of what the full grown species can become. Following this metaphor, the fullness of the oak tree is latent in the acorn. It is implicit there,*

and correspondingly, the depths of man, his unconscious, is the carrier of human potentialities.''[568]

Jordan Peterson: *"In the unredeemed prima materia the alchemist understood matter to be trapped in an imperfect state; just as man himself was trapped in a corrupt and perishable state by his sinful, demonic, physical, material nature. The transformation of this prima materia into gold or into the Philosophers' Stone therefore signified a moral transformation, which could be brought about through moral means. The alchemists were searching for a method to redeem corruption.''*[569]

As stated earlier, alchemy distinguishes agents and objects of transformation, yet it also conveys how every agent (monad or soul) is also an object of transformation, and vice versa. To make these ideas more clear, we will explore alchemy through one of today's most-popular stories, *"Harry Potter"*, which also happens to be an alchemical manifesto. Harry reflects a key alchemical (and hermetic) principle—he is both the agent of change and the object of change; he is the one seeking the Stone, and he himself becomes the Stone. Further, the motivation underneath his action is love and the sharing of perfection—in contrast to his rival Voldemort, who uses power as his first principle of transformation. In short, Harry encapsulates much of the optimist's quest for immortality, while the story as a whole includes its shadowy opposite. It is a fairly complete representation of how alchemy can be used and misused in the course of transformation.

Let's explore more specifics of this story in order to find lessons about our quest. The alchemical vocation, which Harry represents (in the tradition of Hermes), is a "marriage of heaven and earth", "mysterium coniunctionis", "coincidence of opposites", or "enantiodromia". In various ways, these terms all paint the alchemist as one who mediates between opposites. In the alchemist, the Above and Below are combined in a hermetic unity.

Patrick Harpur: *"Since [Hermes] travels, uniquely among the gods, from Above to Below, from Olympus via our world to Hades, his dimension is depth… This is why to come to terms with daimons is also to develop a Hermetic way of thinking, a borderline perception which sees this world and the Otherworld simultaneously—which sees the one in the other, and vice versa, intertwined like the serpents on Hermes' thyrsus… We might call the*

Blakean double vision a Hermetic consciousness, for which there are no dualistic problems of subject and object, consciousness versus the unconscious and so on. Hermes travels freely between upperworlds and underworlds.''[570]

Alchemy, and Hermes as a sort of prototypical alchemist, is a quest to develop the "depth" necessary to be in touch with (and bridge) the most extremely-opposed aspects of ourselves. And it's a quest to develop oneself into an increasingly capable individual—someone who, attaining great spiritual heights, masterfully channels ecstatic bolts of inspiration. This is why we say that alchemy has always been a scientific art aimed at the mastery of transformative experiences and the creation of complex syntheses of symbols which imperfectly retrace the course of the ecstatic flight. We will see soon how this tendency towards *coniunctio* or synthesis tends to play itself out in the evolution of symbols and leads towards extreme complexity.

Alchemy, as the spiritual, soulful, transformational worldview we are developing here, is lucidly depicted in J.K. Rowling's novel series, *Harry Potter* (HP), veiled behind the magical school of Hogwarts. The key insights for our present exploration into immortality come from the fact that there are many alchemists in the HP universe, not just Harry. Henceforth, "witchcraft and wizardry" can be understood as an allusion to alchemy, the real magic of our own world.

J.K. Rowling: *"I've never wanted to be a witch, but an alchemist, now that's a different matter."*[571]

Of particular interest to us is the contrast between Harry and Voldemort—two alchemists whose pursuit of immortality could not be more different. In what follows, it will become clear how Harry represents the healthy, necessary alchemical journey, while Voldemort warns us of how this quest can go astray. Thus, one of this century's most popular works on fictional magic is simultaneously our most well-known and accessible entry into the quest for immortality we've been exploring, and our own real and powerful magic of transformation. HP perfectly encapsulates not only the alchemical process of transformation, but also our cultural distance from it. Many works are covertly alchemical.

John Granger: *"Though pervasive from Chaucer and Shakespeare to J.R.R. Tolkien and Angela Carter, literary alchemy as a stream running through English literature remains unknown to most readers."*[572]

Rowling, having ostensibly written a novel about the "wave your wand" magical school of Hogwarts, has less-obviously (but more importantly) given new life to the (spiritual) magic which we've seen is quite real when understood as a theory and practice of transformation—connected to the ancient threads of shamanism and the Mysteries of Eleusis and much else in a rich magical history.

Harry Potter, as the central and most aspirational alchemist (or "wizard") in the series, is the agent and object of transformation; Philosopher and Philosophers' Stone; quintessence which emerges from and emanates through this art of depth and development. These themes should become more clear in what follows, along with the centrality of love in the metaphysics of transformation—and, by extension, what is implied for our own quest for true immortality.

Lawrence W. Farris: *"Harry committed to the power of love, Voldemort to the love of power."*[573]

Those diverging paths afford us an opportunity to explore a quest for immortality that is not only in touch with love, beauty, wisdom, and the best aspects of humanity, but also the temptation to subordinate the gift of transformational, spiritual magic to the unholy pursuit of power and materiality. This is why we've said that the quest for immortality combines threads from myths in which there is a pursuit of perfection with myths in which there is a sublimation of power.

Carl Jung: *"Where love rules, there is no will to power, and where power predominates, love is lacking. The one is the Shadow of the other."*[574]

Reflecting on the names of this story's two main alchemists, Harry and Voldemort, we can glean initial clues about the starkly different philosophies of immortality they embody. Harry embodies love, and has a shadow of power; while Voldemort embodies power and has a shadow of love.

Anne J. Mamary: *"At its best, alchemy allows us to find the sacred in our mortal lives, to find the magic of the cosmos in ourselves… It is much more about transformations or transfigurations, as the class at Hogwarts is*

called, than about unlimited money or life in an ordinary sense… It is a practice of the very best of what it means to be human in conversation with our human communities, with magical creatures, and with the universe."[575]

Signe Cohen: *"[Yes, and in this sense,] Harry Potter and his archenemy Voldemort can be read as rival alchemists, one pursuing alchemy as a spiritual discipline and the other engaged in a purely material quest for physical immortality. Voldemort's eventual defeat can be interpreted in light of his flawed understanding of the moral and spiritual side of the alchemical work… In the course of the series, both Harry and his enemy Voldemort undergo a radical transformation with alchemical undertones, but whereas Harry's change is a psychological and spiritual maturation, Voldemort's metamorphosis remains only physical and therefore flawed… Both Voldemort and Harry carry names that suggest their association with the alchemical quest: Voldemort's name (which he assumed after rejecting his given name Tom Riddle) means 'flight from death' in French and foreshadows his desperate search for immortality. Harry's own name is plain and ordinary, in startling contrast to the names of characters like Albus Dumbledore… The very ordinariness of Harry's name suggests his status as Everyman in the texts; he is, at the outset of the series, as ordinary as the reader herself. The name 'Potter' nevertheless has alchemical resonances; in alchemical texts and engravings, the potter, who transforms ordinary clay into pots, is a symbol for the alchemist himself, with his power to effect a spiritual and physical transformation."*[576]

Mircea Eliade: *"[So we should] bear in mind this group of identifications: 'masters of fire', shamans, smiths, heroes, mythical kings (founders of dynasties)… The alchemist, like the smith, and like the potter before him, is a 'master of fire'. It is with fire that he controls the passage of matter from one state to another. The first potter who, with the aid of live embers, was successful in hardening those shapes which he had given to his clay, must have felt the intoxication of the demiurge: he had discovered a transmuting agent… Fire turned out to be the means by which man could 'execute' faster, but it could also do something other than what already existed in Nature. It was therefore the manifestation of a magico-religious power which could modify the world and which, consequently, did not belong to this*

world. This is why the most primitive cultures look upon the specialist in the sacred—the shaman, the medicine-man, the magician—as a 'master of fire'... The true significance of this magic heat and of the 'mastery over fire' is not difficult to divine. These powers indicate access to a certain ecstatic state or, on another cultural plane, to an unconditioned state of perfect spiritual freedom."[577]

Harry Potter, like any good alchemist, seeks the beauty, wisdom, health, and freedom of the world. The name "Potter" is a clue that he is a master of fire, one who excels at the transformational arts. In comparison, Voldemort's alchemy feels flawed and hollow. Harry's mastery of fire exalts and perfects everything and everyone around him through his redemptive acts of sacrificial love; whereas Voldemort's mastery of fire is painfully literal, and allows him to excel only at burning down everything in his path towards power and the loneliest kind of immortality.

S.P. Şipal: *"The opposite of Harry, [Voldemort] sought immortality to live forever. As we learn in the first book, he wants the Philosopher's Stone in order to use it. Harry, however, seeks what the Philosopher's Stone represents: knowledge and transformation of the self in order to save others."[578]*

While the metarevolutionary view of immortality does not exclude (and indeed, contextually encourages) the extension of life and physical transformations towards better health, our quest here is primarily spiritual and soulful rather than material. But, in keeping with the alchemical tradition, the transformation of the physical is isomorphic with spiritual transformation, and thus the "laboratory" process which coaxes lead to grow into gold is an exemplary microcosm of exploratory (heroic) engagement with the process of deepening and beautifying our actuality. It is only through contact with the unknown that we can continually transform our society and avoid the kind of stagnation which leads to disaster.

Jordan Peterson: *"The hero, the savior, is metaphorical or narrative description of the pattern by which the existence of anomalous information is accepted…and incorporated into the body of cultural adaptation. The devil, incarnation of evil, is embodiment, in procedure, episode and word, of the tendency that denies, rather than accepts; embodiment of the process that*

consciously inhibits life and its development, and brings to a halt the spirit's revolutionary process of adaptation."[579]

Existing on the edge of chaos, which is to say accepting in manageable bites that which is uncomfortable or dangerous, is what ultimately protects us from the accumulation and violent eruption of disorder.

Carl Jung: *"Knowledge rests not upon truth alone, but upon error also… As Holderlin says: 'Danger itself fosters the rescuing power.'"[580]*

To allow us to follow in those footsteps, a path into a sickness containing its own medicine (or a madness which makes us sane), the HP series unfolds with the typical "coloration" of alchemy—with the stages of nigredo-albedo-rubedo (black-white-red) being the most pronounced and ubiquitous. Colors are alchemical symbols designating typical stages of transformation. And each book of HP, and the series as a whole, use this coloration scheme to identify where Harry is in his alchemical transmutation.

Signe Cohen: *"In alchemical literature, the transformation of both metals and the human soul is often broken down into three main stages: (1) Nigredo—the Black Stage. This stage represents the dissolution and death of the body, so it can be returned to its prima materia, its original substance. Common symbols of this stage in alchemical literature are black birds, toads, and various representations of death and dissolution. (2) Albedo—the White Stage. At this stage, the prima materia is purified. The colors white and silver are often used to signal this stage, as are symbols like lilies, unicorns, and the moon. (3) Rubedo—the Red Stage. In this final stage, the body is united with the spirit and transformed. This stage is often symbolized by the sun, the phoenix, the lion, and the colors red and gold."[581]*

We've seen this pattern in Aragorn of *"Lord of the Rings"*, and in *"The Raven"* by Poe. Interestingly, in both *The Raven* and HP, we see examples of the color changes moving in a reversed order. Poe does this with an opening allusion to the *rubedo* of forgotten lore, moving through the loss of Lenore as *albedo*, and ending in the ominous *nigredo* of the raven's shadow). Whereas in typical literature on alchemy, the process of transformation begins with *nigredo*, or in other words, dissolution and death. These colorful stages of alchemy's art of transformation, and their playful reversal, also inform the entire structure of HP.

John Granger: *"Deathly Hallows bears a much closer look because it is not only a rubedo and finish to the series' alchemical artistry but an encapsulated and near-perfect black-white-red story-telling piece in and of itself. Before looking at it in this way, though, two points need to be made about the series' artistry over the course of seven books, to answer an obvious question. If the last three novels are nigredo, albedo, and rubedo of the series, what function do the first four books serve? First, William Sprague and Joe Packer independently have noted that the first three books are as alchemical as the last three books, but, in keeping with Rowling's ring composition structural artistry, they are in reverse order, i.e., red-to-white-to-black, in parallel with each of the closing books. To make the reverse parallelism complete, the end of each book is an upside-down version of the three stages: Philosopher's Stone closes with Dumbledore destroying rather than creating a Stone; Chamber of Secrets ends with Harry filthy with Basilisk blood, Horcrux ink, and Chamber dirt rather than having been through an ablutionary albedo; and Prisoner of Azkaban, instead of breaking Harry down and stripping him of his identity, reveals his godfather, Sirius Black, to him with the promise that he might once again have a family and home… Goblet of Fire, the fourth and 'crucial' book of the series, according to Rowling, is not any one of the three specific colored stages at the series' pivot but all three at once, a transition from the reverse alchemy of the opening books to the straightforward hermetic coloring of the closers."*[582]

Harry's close bonds of friendship, Dumbledore's insistence on love as the most powerful form of magic, and the total absence of love (or its perversion) in Voldemort as a dark mirror image of Harry, are the crossroads where these two alchemists diverge. Harry's alchemy is typical of the kind which leads in the direction of meaning, love and the Good; Voldemort's alchemy is typical of the kind which leads in the direction of power, and ultimately the total emptying-out of meaning to which we are now responding. Alchemical coloration is a symbolic roadmap of these processes of transformation. Their presence within HP adds to its utility as a practical grimoire of real magic.

Lawrence W. Farris: *"The power of the love that is friendship is a 'power-with' that is able to endure many demands and trials, even those born*

of the folly and ego of friends. But Voldemort knows nothing of this, for his is always a 'power-over.' Friendship empowers those enfolded in its bonds, calls forth their best selves. Voldemort's power does precisely the opposite—overpowering, oppressing those who edge near to him, and drawing forth their darkest instincts… Kissing finds its intended place among Harry and his friends. But kissing is absent from Voldemort's world save for a single manifestation—the Dementor's Kiss, wherein a soul is taken from a person. Instead of binding two souls, a soul is stolen, and with it, personhood. The purpose of the kiss has been utterly perverted, to serve power instead of love."[583]

Travis Prinzi: *"If 'soul' refers to our relational capabilities, then it makes sense that Voldemort, who maintained no close relationships with anyone, would be less hesitant to chop his soul up into pieces. Evil is the evidence of a loveless life."[584]*

This symbolism is close to that of zombies: human-like, while lacking what is most essentially human. Both reflect the soul's *"genius for good and evil",[585]* as Fromm once said. Voldemort, in contrast to Harry, is the dark alchemist—one who, frankly, missed the whole point of his Hogwarts classes.

S.P. Şipal: *"Because Voldemort will never know, refuses to know, community, he will never achieve the eternal transformation Harry undergoes… Consistently choosing to sacrifice others so that he may live, Voldemort has shaped his soul into the denatured, repulsive object revealed in King's Cross. By contrast, Harry has sacrificed himself to save those he loves and has shaped his soul into something radiant."[586]*

Saint Francis of Assisi: *"It is in pardoning that we are pardoned;*
It is in dying to self that we are born to eternal life."[587]

The quest for immortality can only be fully appreciated in this light: It is the unity and renewal of life to be found in free and loving self-sacrifice. Immortality is the quest to transform and perfect the world and to be transformed and perfected by it; loving and ensouling each other into a more beautiful and meaningful existence. It should never be made into a materialistic, power-centric quest for an eternal but empty life. These are the opposing paths of immortality made manifest in Harry and Voldemort.

Signe Cohen: *"As Harry comes to discover, Voldemort seeks to ensure his own immortality by hiding pieces of his broken soul in physical objects that hold significance to him… The splitting of his soul in order to obtain immortality is a horrifying transgression of natural order, which renders Voldemort uncanny, unearthly, inhuman… Voldemort's new body is created from an unnatural blending and blurring of the living and the dead: Wormtail's severed hand, the innocent Harry's living blood, and the bone of his own murdered father… In the Christian tradition, the Eucharist symbolizes God the Father's sacrifice of his own son for the sake of humanity. Voldemort's use of his murdered father's bone is a violent reversal of the Christian motif; Christ was the pious son, sacrificed by his Father to give humans spiritual life, while Voldemort is the evil son, sacrificing his own father so that he himself may live in bodily form."[588]*

Immortality means choosing life, but in an indirect and self-transcending way that is, first and foremost, unhesitatingly generous with love: Expending energy in service of the transformation of all areas of actuality towards a more perfect image of the Good. We see these same themes in an understanding of love and freedom which do not view the Self and the Other in contradiction, but rather finds synthesis and harmony between them. It is what Plato regarded as the highest realization of the Good, in that it contains both an absolute and relative component. And it is what Leibniz referred to as "pleasant", which might sound understated and lacking the gravitas to convey the highest form of love, but nonetheless contains the same sentiment.

Gottfried Leibniz: *"There are two ways in which one can desire the welfare of another: the first, that of the scheming man, because it will lead to his own welfare; and, the second, the way of the lover, as if it is his own welfare… But, you will ask, how can another's good be the same as mine, and even be sought for its own sake?—for it can only be the 'same' in the sense of being a means to my good, not as an end in itself. On the contrary, I reply: it can be an end in itself, it can be sought for its own sake, when it is pleasant. For what is pleasant and what is sought for its own sake, are identical."[589]*

Harry's path to immortality is lined with many self-sacrificing deaths-to-Self—the "way of the lover" which leads to what is pleasant and good;

while Voldemort's is lined with the "scheming man's" death-to-Other, which leads to a narrow and fragmented accumulation of an ultimately meaningless and absurd power. Harry's alchemy is ensouling, while Voldemort's is mutilating. Harry's alchemy, as embodied optimism, leads to the perfection of value from all perspectives simultaneously; it is the enactment of our metaphysics—the practical moral art attached to our optimistic ontology.

Signe Cohen: "*Harry's victory, in the last novel as in the first, stems from his willingness to sacrifice everything, including his own life, for the sake of others… At the series' end, Harry has matured into an adult hero, ready and willing to give his life for the sake of others, while Voldemort, who was engaged in a purely material quest for physical immortality, is stalled in his spiritual development. Perhaps this is why, in the final novel of the series, Voldemort is defeated by Harry Potter, the superior alchemist.*"[590]

In terms of a monadic perspective, we might say that: Monads are indivisible centers of value-in-action with unique perceptions and appetites; they may self-organize into complex (or "composite") monads, which are holarchies governed by a dominant monad; and this evolutionary complexification leads to the perfection of the Good in actuality. In that view, energy transformations are obedient to the Good; every choice is a matter of morality; and the soulful-spiritual vocation of alchemy is exemplary of the quest for true immortality.

The Good, as absolute first principle of everything, is Monas Monadum—dominant monad of dominant monads. From its immortal state of possibility it is implied that actuality is composed of challenges (the metasystem of problems and opportunities)—forks in an endless network of roads which lead to worse or better worlds. One of those is the best actual world, and all transformations which lead in that direction, and only those transformations, are moral. So, morality is the actualization of value through the stewardship of energy. And alchemy is a spiritual science of transformation; it is the active endeavoring (appetition) of monads wishing to become the image of the Good itself.

Alchemy and monadology together imply individuality, wholeness, and the possibility of perfection in every corner of Earth. A grain of sand is a body (or complex) of monads; so is a human; and so is the universe.

Robert Latta: *"Body, for Leibniz, is nothing but a collection of monads (or phenomenon of monads), and consequently the question of the connection between soul and body is only a confused and imperfect form of the question as to the relation between any one monad and another."*[591]

Each of these must be treated as indivisible, unique, and an end-in-itself within a grand holarchy. And it is from this metaphysical basis that we can arrive at a philosophy of transformation that is equally at home in the domains of psychology and ecology. Or, in other words, we arrive at the understanding that all actual change happens within and between individuals (monads).

Robert Latta: *"As the monads alone are real, every change in nature must be the unfolding of the whole which the monad potentially contains or represents… The part cannot contain the whole within itself actually and fully, in all its realized completeness; for then the distinction between whole and part would vanish. The part must, therefore, contain the whole potentially or ideally or by means of representation."*[592]

Our world is a spiritual plenum, not a Flatland. *Actus Purus*, perfected action, is the Good's first emissary, and only symbols can be a universal expression of the Good's movement from possibility to actuality. Now that we have uncovered some of the key elements of our quest for immortality, and the diverging paths it can take (as depicted through Harry and Voldemort), we can start to put it all together within the framework of a symbolic language which most-directly expresses value-in-action.

Alchemy can be described as a philosophy and metaphysics, or a practice, or an orientation. And what we have started to argue is that it also acts upon symbols, and through them, in a process of symbolic transformation.

J.E. Cirlot: *"Alchemy is a symbolic technique which, together with the desire for positive discoveries in the field of the natural sciences, sought to materialize spiritual truths… Each operation, each detail, every subject, every instrument was a source of intellectual and spiritual life: they were authentic symbols."*[593]

The symbolic domain is like a circle which partially overlays another circle, so the two meet and yet have areas unknown to each other. The other circle, in this case, is the Good and, with it, that part of reality we have said is

precariously accessed through dreams, immersive technologies, poetic "vision", a shaman's ecstatic practices, and so on. We are standing in just such a way that we never get a totally clear view of this other circle. We are standing on the other side of the circle which represents the symbolic domain —so the Good is always "filtered" through a symbolic lens.

Naturally, then, the kinds of philosophies and practices we've discussed need some means of speech. And this need will be answered in what follows. The discussion must now turn to alchemy as part of a language of transformation. First, we will talk a bit about symbolic synthesis—as in, how symbols come together into more complex metasymbols. It will be argued that, for example, religious symbols tend to be highly complex metasystems of simpler symbols—taking a great many symbols and unifying them into something even greater than the sum of its parts. And we will talk about an important general pattern of symbolic synthesis, which can be expressed quite simply as 1-2-3-4-1.

Following that, we will be ready to take on the specifics of a universal language of transformation which uses simple and complex symbols in ontological-ethical metasymbols—i.e. symbolic maps which illuminate the most general principles of transformation.

Finally, these ideas will be placed in the context of our metacrisis and meaning crisis, and it will be argued that these ideas, when combined with ideas from the discussion of our hyperorganism, lead to metarevolutionary change: The way out of our meaning crisis is itself symbolic of the path which can overcome the challenges of our metacrisis.

The first of these topics brings us back to HP, which, as literary alchemy, has more to teach us about the general habits of symbols. Symbolic synthesis tends to happen in a simple and oddly predictable way which leads from unity to multiplicity and back to unity. Symbols, rather like complex living systems which persist in an ocean of entropic disorder, have a sort of unbalanced Gödelian incompleteness to them which makes them strive towards self-surpassing. And because the symbol is analogical by nature, being itself and beyond itself simultaneously, symbolic synthesis proceeds stereotypically by a sort of analogical addition.
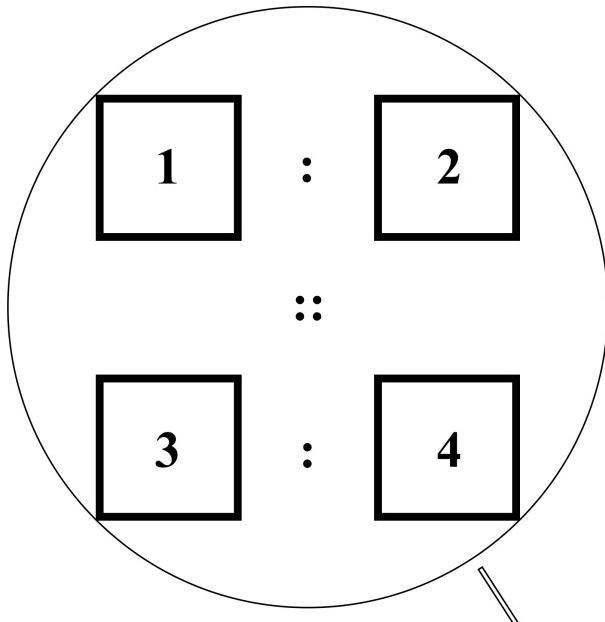
"One is to two as three is to four".
This common quaternity structure makes
many analogies into quintessences of four
more basic elements.

Analogy

This pattern, visualized above, can be narratively described as follows: Synthesis takes One concept, a unity, and attempts to make sense of it through comparison between Two of these Ones. The Two have a dialogue which produces Three, which at once resolves the paradox of the Two Ones, making it a new unity, and leaves the paradox in place, making it part of a trinity. Three, which emerges from Two, can do nothing in its unbalanced state but attempt to make sense of itself through a comparison to another Three, whose addition leads to Four. The Four expresses how One-is-to-One is like how another One-is-to-One (or, otherwise, "this is to that as another this is to another that" or simply "1:2 :: 3:4"). Four is an analogy of analogies, making it a quaternity. From the Four's metaanalogy, a new One emerges: a

quintessence, which, like Three, partially resolves a paradox while leaving its central elements in place.

This process is built into the symbolic domain, and so we will tend to see it quite predictably in stories involving transformation, and especially those which are explicitly alchemical in nature. Let's explore an example from HP.

Harry, along with his close friends, Ron and Hermione, and the Hogwarts school as a whole form a picture of alchemy which is indispensable for our metarevolution: They are on a quest of mutually-sacrificial, redemptive, purifying transformation and movement towards wholeness-within-wholeness.

Rowling depicts the story's key allegorical transformations, those of Harry and Hogwarts, through various unities of opposites; most notably in the way Ron and Hermione act as Sulphur and Mercury in Harry's alchemical transformation, and the way the four Hogwarts houses are unified in Harry as quintessence.

Anne J. Mamary: *"[John] Granger suggests that Hermione plays the role of Mercury, with her dentist parents and her initials Hg, the chemical symbol for the element. Fiery, red-headed Ron represents Sulfur, which Paracelsus described as the fire of burning wood… Ron and Hermione work to make Gold of Harry's Lead. The three of them together make the Philosopher's Stone, or the Stone of Wisdom, each transforming and purifying the others."[594]*

Mircea Eliade: *"The alchemical combination of Sulphur and Mercury is always expressed in terms of 'marriage'. But this marriage is also a mystical union between two cosmological principles."[595]*

Each book in the series contains one of these "marriages", also called *mysterium coniunctionis*. And, in culmination, the ultimate transformation of Harry in the final book is depicted through a celebratory feast at Hogwarts: Harry embodies the quintessential oneness at the center of the tetramorphic Hogwarts houses. This moment of synthesis is symbolic of the successful alchemical operation which creates "gold", the Philosophers' Stone, or immortality. It is almost always marked by the emergence of a new

quintessence—which could take the form of a person, a symbol, an idea, or perhaps an entire society.

John Granger: *"[This is expressed through] the principal conflict of the books—the defining polarity is less between that of Muggle and Wizard than between fire and water, the Houses of Gryffindor and Slytherin, an archetypal set of contraries that Rowling represents as a rift that stretches back to a break between two of the Hogwarts Founders, Godric Gryffindor and Salazar Slytherin. At series end, the death of Lord Voldemort brings about a resolution of these contraries when all four Houses sit down together rather than at separate tables in the Great Hall after the Battle of Hogwarts."[596]*

Charles Nicholl: *"[This scene] is essentially an emphasis on gold as a condition rather than a mere substance. In making philosophical gold, the alchemist was creating in matter a condition of harmony and incorruptibility."[597]*

S.P. Şipal: *"[And] by seeking their own quintessence, the fifth, or sacred, element which represented the purest essence of the metal or person, [alchemists] believed they would produce the Philosopher's Stone in their own lives and become spiritually immortal… The quintessence is the fifth element with which the alchemists could work. It was the essential presence of something or someone, the living thing itself that animated or gave something its deepest characteristics. The quintessence partakes of both the Above and the Below, the mental as well as the material. It can be thought of as the ethereal embodiment of the life force that we encounter in dreams and altered states of consciousness. It is the purest individual essence [nature] of something that we must unveil and understand in order to transform it."[598]*

Paracelsus: *"[This] nature is not visible, though it operates visibly; for it is simply a volatile spirit, fulfilling its office in bodies, and animated by the universal spirit—the divine breath, the central and universal fire, which vivifies all things that exist."[599]*

Charles Nicholl: *"Among the names the alchemist gave to this spirit, one of the most common is 'quintessence'."[600]*

S.P. Şipal: *"Quintessence, for J.K. Rowling, is embodied in Harry."[601]*

A symbol of quintessence, Harry is in the auspicious company of such figures as Christ, Sophia, and Hermes—all variously appearing as the unifying force mediating a tetramorphic complex of symbols. We've previously alluded to the importance of these quintessential figures by way of a mimetic theory of desire—as in, *imitatio christi* is one way to express the goal of becoming the quintessence, or of the individuation of the Self. Or, put another way, they are means of directing the insatiable appetition of monads in the direction of greater value, meaning, and perfection. This occurs through symbols which point towards these things, and especially in certain kinds of symbols like quaternities (or tetramorphs) and their quintessences, or mandalas with their simultaneous unity and multiplicity. It is like holding up a mirror which shows one their perfected self, and by gazing into it one slowly becomes more perfect.

The symbols which convey this striving for greater depth and development are key-like, acting as points of access into spaces of transformative potential. And the more complex a symbol (having a higher density of other symbols unified within it) the more doors it opens. And that is why cultures throughout the world, present and past, have tended to develop metasymbols such as quaternities, tetramorphs (and their quintessences), and mandalas.

Anthony Stevens: *"['Mandala' is a] Sanskrit word for 'magic circle', a geometric figure incorporating both a circle and a square, divided up into four (or multiples of four) segments radiating from the center. It stands as a symbol for the wholeness of the Self, the deity, and the cosmos. [As Jung says:] 'Most mandalas take the form of a flower, cross, or wheel, and show a distinct tendency towards a quaternary structure'… The mandala is a transcendent symbol par excellence; it represents the achievement of the goal: the opposites are reconciled in a state of dynamic balance."*[602]

J.E. Cirlot: *"[And] Jung uses the word 'archetype' to designate those universal symbols which possess the greatest constancy and efficiency, the greatest potentiality for psychic evolution, and which point away from the inferior towards the superior… He specifically says: 'The psychological mechanism that transforms energy is the symbol.'"*[603]

Quaternities & Quintessences
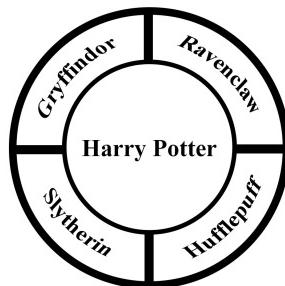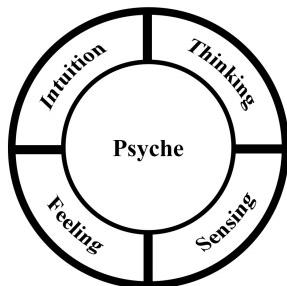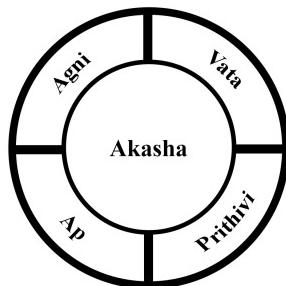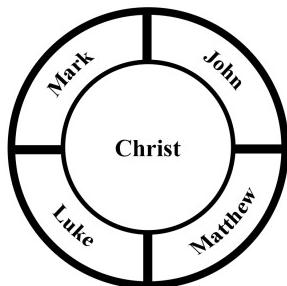
Because the Good has typically been equated with, or mythologized as, something divine or supernaturally spiritual, these predictable patterns in the life of symbols could be, as Matthieu Pageau says, metaprophetical. As in, not only do highly complex metasymbols hold reservoirs of transformational affordances, they also reveal something beyond any present context—they reveal some of the general properties of prophecy and moments of ecstatic inspiration. Pageau gives the example of Ezekiel's vision in the Bible.

Matthieu Pageau: *"The vision of Ezekiel is really a meta-prophecy in the sense that it reveals the inner workings of divine revelation… In other*

words, the cherubim represent the patterns of meta-cognition through which the Creator is revealed to the prophet."[604]

Edward Edinger: *"The vision is of a great chariot with four massive wheels, and above it is the vault of the heavens, and sitting above that vault is the God-image 'in the likeness of a human being.' And each of the great wheels is surrounded by eyes all around its rims and each wheel is accompanied by a creature with four faces. This vision is really the culmination of the Old Testament, understood psychologically, and it's the foundation for Christian mandalas of Christ supported by the four evangelists, three of whom have animal faces and one of whom has a human face. It's the starting point for all later Jewish mysticism. Jung used this same image as the basic pattern for his formula of the Self."[605]*

Anthony Stevens: *"Why are the great cathedrals of Europe adorned with images of eagles, lions, and oxen? Do they indicate that medieval Christians worshipped animals? That would be a plausible supposition if we knew nothing of Christian iconography. Our perception is changed, however, once we learn that these creatures symbolize three of the four Evangelists and that the symbols are derived from a vision received by the prophet Ezekiel. Our understanding is deepened by the discovery that they are*

21 LE MONDE

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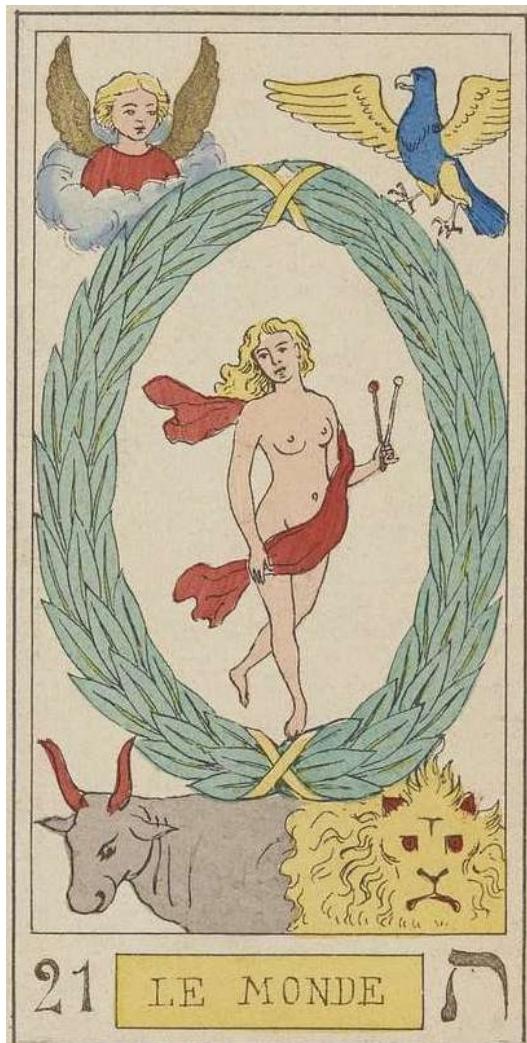
analogous to the four sons of the Egyptian sun god Horus. Still further investigation carries us back to the most ancient of symbolic configurations: the quaternity, the mandala, the cross—all symbols of totality. These in turn owe their origins to the neuropsychic capacity to conceive coordinates—North-South, East-West, up-down, left-right—a capacity which is indispensable to orientation in the real world of phenomena and inseparable from the earliest beginnings of our conscious perception of the world and our appreciation of the miracle of existence… To explore a symbol [in this way], to trace it to its archetypal roots, is to follow it back through time till its universal configurations and its psychobiological foundations stand revealed."[606]

We wish to make a similar point as we carry forward our discussion of transformation. If the Good makes itself known through symbols, the patterns by which metasymbols emerge are, themselves, symbols. The 1-2-3-4-1 pattern reveals some of the "inner workings" of transformational experiences without being confined to any specific context—just as Ezekiel's prophecy reveals some of the principles of prophecies in general.

In the following section, we will weave many of these different threads of transformation together into a coherent whole. It will be important to remember: foundational ideas about transformation and transformative experiences; the face of depth and the face of development; methods of "journeying to other worlds" such as dreaming, active imagination, and many kinds of ecstatic experiences; the interconnected purposes of symbols, myths, rituals, and cultures; the ways in which symbolic and analogical structures evolve; and the ways in which extremely simple and extremely complex symbols act symbiotically in the discovery and renewal of meaning.

With these ideas in place, we can now explore the universal language of transformation and the sacred game which pens it.

2.2.2

THE CHALLENGE OF

MEANING

"Yet still above this vale of endless dying
Man's spirit, struggling incorruptibly,
Painfully raises beacons, death defying,
And wins, by longing, immortality."[607]

- Hermann Hesse

Value and Action are lovers, and their connection is erotic and symbolic.

It is time for us to apply revolution to itself—to radically change the underlying conditions of all radical change. We shall do this through a scaling up of the imaginative-symbolic-analogical methods we've been describing—which the individual may know through dreams or artistic inspiration. The hope is to achieve something like alchemy-at-scale: This will be the imaginative, symbolic, and ecstatic layer of our hyperorganism—operating alongside its other holarchic systems such as the ones relating to collective intelligence and sensation. We need to bring together what was said about transformation with what we have learned about topics like complexity science and game theory.

This compels us to attempt a complexification of perfection-oriented action (transformation whose first principle is the Good). The idea is to combine what we have learned in the preceding discussions of metaphysics, transformation, and symbols with the ideas and tools gleaned from topics like stigmergy, hypergames, and all those ideas which help us form interactive wholes which are greater than the sum of their parts.

The motivation for a synthesis of these subjects is, of course, our metacrisis, and the realization that it is necessary to become metarevolutionary to overcome our present turmoil. To that end, what follows is an attempt to address our meaning crisis—while, in turn, the proposed resolution reveals metarevolutionary principles beyond its initial domain. Let us spend some time reconsidering our meaning crisis from this new perspective. Our intention is to reverse the gears of meaninglessness, such that, by the end of this book, we can see the outline of a new world beyond the zombie apocalypse.

We said that the nature of our meaning crisis involves the ascendency of nihilism over optimism—or, otherwise, a power-ontology over a value-ontology. Additionally, this battle of diverging tendencies takes place in action-centers with unique perceptions and desires. Monads and/or complexes of monads shape each other as heliographic mirrors, at once communicating with each other and becoming symbols for some transcendent source of light. The transformation from human to zombie, therefore, involves a mimetic process of mutual influence; and the greater the presence of nihilism, the

stronger the positive feedback loop of power-centric mimesis. Hence we reached our description of a meaning crisis as contagious nihilism. From that formative beginning in absurd, empty nothingism, people and institutions and countries begin to resemble zombies in their ceaseless but pointless activity. Subsequently, actions taken by these hollowed-out holons will leave traces in a shared medium, and stimulate further meaninglessness in a stigmergic process which will resemble the spread of a contagion.

The thing which spreads, virus-like, through our world is metaphysical rather than biological. Whether it takes shape as a straightforward, full-throated, and unashamed claim that value isn't real and that nothing really matters, or as a stealthy and insidious passenger of some well-intentioned action, the metaphysical sun known as the Good is being brought to perfection or destruction at every moment; its energetic gifts are cherished or squandered in degrees which correspond to more or less moral and antimoral action, respectively. And our present discussion of transformation aims precisely at putting us in closer touch with the light of the Good which illuminates meaning; or, in other words, we are perfecting the relationship between Value and Action.

To say it again, meaninglessness is certainly one of the defining crises of our time. We have strengthened this claim by showing how deep it is in a hierarchy of crises, as defined by its proximity to first principles. In other words, as a crisis within a metacrisis, it has a large effect on almost every other crisis (and relatively small changes within it can have disproportionately huge, cascading effects through other crises). And, by its very nature, it returns again and again—so meaningfulness must be self-renewing. In short, we are stuck between optimism and nihilism; we are centers of action whose choices, perceptions, and desires continually transform us into more perfect or more distorted images of the Good; and we are confronted with an eternal challenge to discover meaning.

Our proposed solution to the life-or-death moment presented by our current metacrisis, and our meaning crisis most acutely, is active optimism. Nihilism pulls us in its own nefarious direction, so we must ritually and perennially renew Love—that attractive and entwining force between Value and Action which causes them to mingle and thereby manifest meaning.

To be optimists in this active sense requires us to carry forward what was said about topics like dreaming, VR, and active imagination, which indicated the universally-accessible possibility of personal and epistemic transformation. Similarly, shamanism and alchemy indicated our intention to master the state of ecstasy—to be "masters of fire". And the Mysteries of Eleusis were illustrative of the kind of personal-collective interweaving of transformational experiences which we presently seek: Each initiate had their own personal journey, but they were also enacting a culturally-important myth (of Demeter and Persephone)—thus becoming a conduit for these symbols which acted as transformational affordances; and they were participating in the kind of ecstatic "otherworldly" journey which produces these very symbols—closing the loop, as it were, and becoming sources of renewal for the very same myths and symbols.

And alchemy, in particular, also illustrated the need to create and then be created by symbols of transformation. Alchemy has long been seen, if it is recognized at all as a spiritual and symbolic art (rather than proto-chemistry), as a somewhat solitary endeavor—or even an intentionally obfuscating one. The lonely alchemist in his laboratory communicated much of his transformational experiences in the form of symbolic shibboleths. Granted, some of the secrecy was justified in time-periods where esoteric practitioners were imprisoned or killed; and there seems to have always been a fear of magic falling into the wrong hands. Still, the question for today is not just about taking alchemy out of the shadows and arriving at a society with lots of individual alchemists, but understanding how a hyperorganism can be an alchemist. We must, as we have done earlier, view things from the perspectives of holons at vastly different scales.

The goal comes into full focus when we consider the intersection of complexity science and our theory of transformation. Individuals like shamans have had transformative experiences for tens of thousands of years, and the basic capacity for imagination and ecstasy must extend at least as far back as the early hominids—but what is new in our time is the possibility of complexification beyond any scale yet seen on Earth. That evolutionary process of increasing complexity-consciousness led us to consider the perspective of an emerging hyperorganism.

Further, we saw how simple-but-scalable mechanisms like stigmergy exist throughout the great chain of monads. Financial markets, for example, are exemplary of a well-defined stigmergic arena at the human level. At the same time, these markets illustrate another harmony between individuals and the communities they form—namely, incentive compatibility. Each individual participates in this game because they want to, and have something personal to gain; it conveys a rational self-interest or self-assertiveness from whatever limited perspective. Yet, at the societal or planetary scale, that individual participation creates emergent properties which, arguably, are even more significant and beneficial for these same individuals. Thus it also seems to contain a certain altruism or self-transcendence. We need to use this engine-like effect of incentive compatibility in combination with all that has been said of transformation. The result will be a personally-attractive game in which the emergent property of gameplay is symbolic fluency, imaginative mastery, and analogical sagacity.

But first, let's put the various pieces of this game into place, so that its nature and purpose will be apparent. It starts with the Good. If the absolute first principle of everything is indeed this distant-yet-close beacon of perfected Value, then Action is always a heliograph partially and imperfectly reflecting the light of its source. Participation in truthful reflection begets truthful reflections in an expanding mimetic landscape; genuine participation in the relationship between Value and Action is morality; and, in dialogue and community between action-centers, there is an asymptotic movement towards perfection. When this process falls apart, the result is that the discovery of meaning is halted and reversed; annihilation sets in. We have sunk deeply into this process which moves value-in-action in the wrong direction. And the traumatic repression of our humanity is surfacing in the collective, cultural dream we call "myth"—it is surfacing as zombies.

Our meaning crisis is itself symbolic of our metacrisis, and the way we address the former will link it analogically with the latter. We searched for the deepest area of our metacrisis, and found that the Good stands as first principle; this leads to optimism, and the loss of this true optimism results in a nihilistic meaning crisis. This, though it took many pages, naturally leads to modes of action involving symbols, because they function as connectors and

mediators of otherwise disorganized areas of reality. Symbols (and/or analogies) are organization, *per se*. There is no connection, and thus no organization or hierarchy, which is not symbolic and analogical. There is no love which is not an image of Love, a transcendent possibility which actual love includes by instantiating it, and in some sense transcends its transcendent idea by being more real than a theoretical and disembodied possibility.

Love is part of the basic structure of the cosmos, and Value and Action can never be disconnected, only more or less dysfunctionally connected; and the perfection of their relationship takes the form of a progressive perfection of the symbols which dynamically link the two. As an aside, this coincides with the optimistic dictum that there is no Bad or Evil in the same sense that the Good is a fundamental aspect of reality; instead they are shadows of positive metaphysical ideas, and so lack the same ontological "body". In other words, it is more accurate to say that things or people or other entities lack, in degrees, perfection, rather than that they contain something called "evil".

Thus, the universe as a whole is a symbolic plenum of quanta called monads, which are minima of value-in-action, and are measured quantitatively by Planck's constant and qualitatively by the Good.

The universe, tending towards perfection, expresses itself through a complexification of the symbolic order. This means that there are primordial symbols which, like material particles, tend to come together in a process of contradiction-preserving synthesis and movement towards complexity-consciousness. The great religious symbols and widespread mandalas, with their outstanding multiplicity and harmonious unity, stand as testaments to the natural *telos* of symbols—and, truly, the cosmos as a whole. Complexification is never blind, and in whatever domain we observe this pattern, it is guaranteed that the process, as means, remains subservient to an end, which is the Good.

As we now know, the Good as absolute is perfected value. It implies, through possibility, an actuality that spans total darkness to total illumination; and evolutionary self-organization advances in a gradient ascent towards its obligatory and immortal challenge. Such is optimism's value-ontology. The Good, like the Sun, is different from what it casts its light on, yet it imprints and embodies itself in what it touches; this is what makes it simultaneously

absolute and relative, and only "mythologically" are these to be imagined as the two separate spheres of Sun and Earth.

Plato: *"Just as in that other world it's right to think of light and sight as sun-like but wrong to identify them with the sun, so here too it's right to think both knowledge and truth like the Good but wrong to identify either of them with it. The standing of the Good is to be yet more highly revered."[608]*

The "otherworld" is both in and beyond our world; it is the Good and its subholonic ideas. And Action, reaching out towards its source, brings reality on an asymptotic journey towards the possibility of perfection. Reality is chiefly defined by this never-ending, never-stagnant relationship between Value and Action.

Reality, as opposed to possibility or actuality as conceptual "halves" of what is real, is defined by their dynamic union—divisible conceptually but not practically. And this constant, pervasive union of opposites (absolute possibility and relative actuality) is what makes the moral life much like the shifting, dancing, ever-changing quality of light at different times of our earthly days. There is something so close and yet so far about the sun's embrace of us.

J.E. Raven: *"The sun stands for the Idea of the Good, sight for intelligence, the eye for the soul, and light stands for the truth."[609]*

According to Leibniz, God's goodness led him to choose the best of all possible worlds—and this is the one in which there is neither an excess of variety nor order.

Gottfried Leibniz: *"Now, as in the Ideas of God there is an infinite number of possible universes, and as only one of them can be actual, there must be a sufficient reason for the choice of God… And this reason can be found only in the fitness, or in the degrees of perfection, that these worlds possess."[610]*

Robert Latta: *"In other words, the actual universe is the result of [an unrestricted] choice of God among all possible universes… It is not an arbitrary choice, but a choice according to reason. God chooses as the actual universe that whose compossible elements admit of the greatest amount of perfection or reality… Thus the actual universe is the 'best of all possible worlds'."[611]*

John Hostler: *"There is always a reason that determines a choice, but it is a reason that 'inclines' and does not 'necessitate'. So it was quite certain that God would choose the most perfect world, but…there were so many possible worlds from which to choose… And the same liberty is present in the case of human choice, by the mere fact that there is more than one alternative."[612]*

In a universe of total order, as in the structure of a crystal or the culmination of totalitarian government, there are no true individuals, and spontaneity degrades into determinism. The soul of the world is lost when it is not composed of free individuals. Love becomes impossible. This would be pathological orderliness.

On the other hand, the white noise of a radio signal, or the entropy which thermodynamics says is constantly increasing, represent states of maximum variety and minimum order. This is no better than the crystalline structure of the totally-ordered universe—both are somewhere between unbearable and impossible from a human perspective. Therefore, the best of all possible universes must have a dynamic balance of order and variety. And because the physics of our reality allows for spontaneous self-organization, which is an ordered complexification at the edge of chaos, it seems we do, as Leibniz claimed, live in the best of all possible worlds: That one in the "Goldilocks zone" of order and chaos.

Gottfried Leibniz: *"It follows from the supreme perfection of God that he has chosen the best possible plan in producing the universe, a plan which combines the greatest variety together with the greatest order."[613]*

John Hostler: *"The perfection of a complex system such as the universe is thus to be understood as a function of variety and order together."[614]*

Nicholas Rescher: *"There is nothing new and original in a stress upon variety and order as aspects of the perfection of creation… What [Leibniz] adds is exactly to establish these two long-prominent aspects of the world's perfection as jointly operative and mutually conditioning criteria joined within a single two-factor standard of the perfection of a possible world…[and of] a balance of these factors in a state of mutual tension."[615]*

Ordered complexity results from the self-organization of value-in-action, and that dynamic (or even precarious) balance of systems far from equilibrium is where there is enough order to uphold individuality and also enough variety that these individuals may experience something like genuine, non-deterministic choice—something which concurrently expands with self-organized complexity-consciousness. Leibniz, we can speculate, would say that God loves autopoiesis because when order and variety are dynamically balanced, self-organization produces a simultaneous flowering of these two variables (in the form of ordered complexity); and although it always tends towards His perfection, it does so in a way that surprises and delights Him: Spontaneity redeems divinity.

We may arrive at an analogous conclusion—both of which are optimisms—with nothing more than the conviction that the Good is real, and that, of the metaphysically-possible universes that might have happened, we became actual in the one with the greatest possibility of goodness. This is because it is a universe in which creative self-organization, Love, and Freedom are underwritten by the metaphysical possibility of the Good and physical laws which allow for the creativity, spontaneity, and playfulness that accompanies ordered complexity.

And so we may begin the journey from our optimistic cosmogony and ontology towards a theory of moral action—a theory involving transformation which leads in the direction of value, meaning, perfection, and immortality.

This starts with the idea that the transformation of energy is the sole vocation of souls, and all of these transformations involve the real, non-relative value of the Good (i.e. a qualitative, metaphysical component) as much as they involve some quantity of the fundamental "exchanges" or "forces" of physics. This is the same as Plato's philosophical conviction that the fire that lights our cave is but an echo of the sun outside the cave, and that this greater fire's natural light may be retrieved, via *philosophia*, and brought back down into the cave for the benefit of all. Here again, we see why shamanism and alchemy (which seek "mastery of fire") are among the vocations most directly connected with the practical, active side of optimism.

Energy transformations can (and must) lead either in the direction of meaning or meaninglessness—the perfection or destruction of actualized and

contextualized Value—because reality is, at its core, value-in-action. This makes energy a moral concern, and perhaps the first moral concern upon which all others are built. Misused energy is antimoral; chronic misuse leads to the total loss of meaning symbolized by zombies. And if we can understand that our human condition exists somewhere between the extreme ends implied by our two possible orientations of optimism and nihilism, it may not be too late to pull ourselves out of the tailspin which zombie mythology so vividly conveys.

These are the concepts and conditions at the core of our meaning crisis and metacrisis, and the purpose of the present discussion is to convince readers that the gears of meaninglessness and hopelessness are reversible: The same energy basis which flowers into the complexity-consciousness of humanity opens us to the choice between the actualization of nihilism (Love's murder by Power) or optimism (Love as the transcendent function which connects us with the absolute Good).

As such, every process or action is morally judged by its effects on the depth of connection and development of souls at every magnification of the universe. Transformation and transformational experiences are metarevolutionary, because we are addressing how centers of action are always reinventing themselves and forming new centers-of-centers; i.e. the evolution of value-in-action is the ongoing self-organization of monads; it is Becoming, *per se*.

Our metacrisis is a tractable moral concern if and only if we can understand the energy basis of everything well enough to be stewards of the Good—which exists absolutely but is not actualized automatically. The Good sets in motion the metaphysical possibility of the actualization of perfected Value, just as the physical laws of the universe set in motion the possibility of creative self-organization and a tendency towards complexity and consciousness. Our game is to choose the best of all available actions— namely, the configurations of Action we may call perfected Love, which, among all alternative paths, makes the Good most actual by uniting Value and Action. This is what we have hinted at through our discussion of dreaming, shamanic ecstasy, and alchemy. With this in mind, we may continue to reveal the intertwining processes of spiritual-physical energy transformations.

We must ask: How does the Good self-organize? If value-in-action is the whole of actuality, what are the "real units" which are engaged in that process? This is the place of Leibniz's monads, and the complementary view which holds that everything contains information, and, through coexistence in a plenum, is symbolic or analogical of everything else. These views will be elaborated in what follows when we face the challenge of meaning.

Monads, imperfectly reflecting Monas Monadum—through unique perceptive and appetitive qualities, and symbolic relationships to everything else in a comprehensive language of hierarchically nested analogies—are the "simple substances", "spiritual atoms", or "real units" needed to understand how human-level consciousness can emerge, and why it is necessarily a consequence of Value's loving mixture with Action.

Gottfried Leibniz: *"The Monads, having no parts, can neither be made nor unmade. They neither come into being nor come to an end by natural means, and consequently they last as long as the universe, which will be changed, but which will not be destroyed."*[616]

Monads reveal an entirely natural, scientific panpsychism: Minds (or souls) emerge through the self-organization of spiritual atoms (monads), which means the basic pieces of consciousness exist in every physical unit (such as the quarks or other elementary particles of quantum physics). And there is no disagreement between spiritualization and free-energy minimization: Both describe the universal "awakening" of a monadic plenum, whose evolutionary advance through metasystem transitions allow for a more-perfect resemblance to the Good.

Francis Heylighen: *"[Teilhard also] does not see matter and mind as separate. He assumes that even particles have rudimentary 'mental' capabilities, such as being able to sense the forces they are subjected to… Such a 'panpsychist' perspective is much less mystical than it may appear, being perfectly compatible with sciences such as quantum field theory or complex adaptive systems. From an evolutionary point of view, it is clear that sensitivity, goal-directedness and cognition did not suddenly appear with the emergence of Homo sapiens."*[617]

Just as complex organisms do not spring into existence, but rather emerge through so many metasystem transitions which lead in the direction of

complexity and consciousness, these very organisms are "complex souls"—self-organized metasystems (Leibniz's "composites") of monads. With monads as our material-spiritual holons (embodied units of quality), we are ready to propose a resolution to our meaning crisis while demonstrating metarevolutionary principles. And, for that, we need a language of value-in-action.

We have, so far, put in place a theory of transformation with elements such as dreaming, imagination, and alchemy. This is a step towards resolving our meaning crisis, because the basis of this crisis is transformation moving in the wrong direction. Stated otherwise: Our meaning crisis has come about from the misuse of energy, wherein Power or other ontological principles usurp the Good as the focus or *telos* of transformation.

Our next step is to combine what we know about transformation with what we know about complexity and the evolution of our hyperorganism, because our goal is not just to find a revolutionary resolution to our meaning crisis, it is to use this crisis-revolution pairing to simultaneously demonstrate metarevolutionary principles. If we succeed, what we learn about overcoming this crisis will be applicable to our whole metacrisis.

Thus, the intersection of transformation and complexity brings us to the idea that the former, as an expression of real changes in the domain of value-in-action, must also follow the dictates of the latter as it relates to the future of life on Earth and beyond. Transformation must undergo complexification. We seek a "scaling up" of things like active imagination and ecstasy, just as we did earlier with intelligence, sensation, and prediction.

For this job, we need symbols—from the very simple to the very complex. The former is expressed through symbolic representations of the fundamental constants of the universe, the energy-transformation symbols of Energese (also called the Energy Systems Language), and other "basic" or elementary symbols (such as those of math and logic). The latter is expressed through symbols such as quintessences, mandalas, yantras, the Christian cross, and the alchemical Monas Hieroglyphica (and, as we've seen, the myths and rituals which are carriers and incubators of these symbols). As a whole, this is an extension of what Leibniz pursued under the name of *characteristica*

universalis, a neighbor of what Hermann Hesse described in his Glass Bead Game, and a metarevolutionary solution to our meaning crisis.

R.W. Meyer: *"As a boy, Leibniz had an intuitive vision of an 'alphabet of human thoughts'; throughout his later life he confessed a boundless love for this idea of a 'divine science' based on analysis, symbolism and combinational synthesis."*[618]

Energese

Source

"The circle indicates a source of energy from outside the system... It may be a steadily flowing source like a river... It may be a source that varies, as solar energy does from day to night. We can add words to the diagram to describe what kind of energy is being considered."

Consumption

"Energy consumer; often a self-maintaining unit: they use their own resources to operate themselves. Examples are organisms, towns, industries, and humanity. The hexagon…implies that there are storages and feedback interactions."

Store

"A storage of some kind of energy within the system. The symbol could indicate energy stored in an elevated water tank, in an oil tank, in the manufactured structures of a building, in a library (information), or in any way that makes it ordered and valuable."

Energy Loss

"The loss of degraded energy—that is, energy which cannot do any more work—from the system… Heat sinks are required on all storage-tank symbols and all interaction symbols."

Interaction

"The interaction of two or more types of energy required for a process. In the example of the farm, sunlight interacts with water, soil, bought machinery, and stored structure: all these are required for the interaction that produces food… It can also be called an amplifier."

Generic Flow

A flow of energy, measured in calories/emcalories, or power/empower.

Transaction
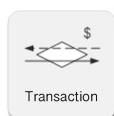
"Indicates the flow of money in one direction to pay for the flow of energy or energy-containing materials in the reverse direction."

Production

"Usually contains storages and interactions."

Container

"This can be used for any purpose but usually designates an important subsystem."

Switch

"Used for flows. The switch may be a simple on or off, or [change flows based on other conditions]."

Credit: Quoted from "Energy Basis for Man and Nature" by H.T. Odum & Elisabeth Odum
and "Environment, Power, and Society for the Twenty-First Century" by H.T. Odum

Gottfried Leibniz: *"And although learned men have long since thought of some kind of language or universal characteristic by which all concepts and things can be put into beautiful order, and with whose help different nations might communicate their thoughts and each read in his own language what another has written in his, yet no one has attempted a language or characteristic which includes at once both the arts of discovery and of judgment, that is, one whose signs or characters serve the same purpose that arithmetical signs serve for numbers, and algebraic signs for quantities taken abstractly. Yet it does seem that since God has bestowed these two sciences on man-kind, he has sought to notify us that a far greater secret lies hidden in our understanding, of which these are but the shadows... Upon making the effort to study this more intently, I necessarily arrived at this remarkable thought, namely that a kind of alphabet of human thoughts can be worked out and that everything can be discovered and judged by a comparison of the letters of this alphabet and an analysis of the words made from them."*[619]

Nikolay Milkov: *"Around 1679 Leibniz started to speak of his characteristica universalis as of 'a certain new language that some people call Adamic language, and Jacob Böhme calls 'nature language'. He also connected it with the language of Cabbala and with the characteristica of the 'magicians'."*[620]

R.W. Meyer: *"[It was Leibniz's goal to] perfect this method in mathematics, in philosophy and theology, in legal, political and technological subjects, and to develop it into an encyclopedic system."*[621]

Sholto Maud & Dino Cevolatti: *"[With] Leibniz's characteristica universalis project, which aimed to develop symbols for a philosophical language that synthesized mathematical and physical laws...one could give exact descriptions of natural things 'such, for example, as the structure of plants and animals'. It will be a general symbolic method 'by means of which the relations of all things are suitably represented in characters'... Extending this notion further, Rutherford writes, that by utilizing the characteristica universalis, '...it will become possible to reason in ethics and metaphysics with a degree of certainty hitherto only found in mathematics'."*[622]

Basic Symbols

Universal constants & practical units

Symbol	Description
h, h	Planck's constant, reduced Planck constant
c	Speed of light in a vacuum
k	Boltzmann's constant
e	Elementary charge, electric charge of one proton
m	Mass, quantity of matter
G	Gravitational constant
b	One bit of information
f, Hz	Frequency, hertz
cal, emCal	One calorie of energy, one calorie of emergy
▣	One state, holon, subsystem
⊙	Monad

Gottfried Leibniz: *"Once the characteristic numbers for most concepts have been set up, however, the human race will have a new kind of instrument which will increase the power of the mind much more than optical lenses strengthen the eyes and which will be as far superior to microscopes or telescopes as reason is superior to sight… So I repeat what I have often said: that no man who is not a prophet or a prince can ever undertake anything of greater good to mankind or more fitting for the divine glory."[623]*

The hope for such a language is that we can communicate the exact energy transformations which are most likely to make the Good actual from an initial state of possibility. Leibniz had great hopes for this ultimately unfinished project, and the moral and spiritual urgency of a universal symbolic language has never been greater. Though some rather straightforward technology will connect us in new systems of collective intelligence and sensation, it is not clear how we might overcome meaninglessness without actively engaging in the symbolic arts at a similarly grand scale. Ontological and moral discoveries must also be a planetary endeavor.

Barry Smith: *"The goal of a directly depicting language is that of constructing a system of diagrams that will allow the direct and adequate depiction of a maximum number of (kinds of) ontological facts."[624]*

Francis Heylighen: *"Putting together meaningful symbols that are normally never put together…incites the creation of new associations and combinations in the brain, thus stimulating imagination, creativity and discovery."[625]*

A universal language of value-in-action is necessary for the mastery of transformations. Speaking this language is one of the first steps in aligning actual flows of energy with the Good as absolute first principle, and thereby moving ourselves in the direction of perfected energy transformation (which may simply be called Love). When Love is enlightened by the Good, we will see it flower as Beauty, Wisdom, and Freedom.

We will need a combination of basic mathematical and logical symbols, complex symbols such as mandalas, and others like Energese which express the most basic actions and ideas. These components form our *characteristica universalis*. And that's because this spectrum of symbols allows for the best-possible communication about the most basic feature of

reality: the Good. Reality is composed of Value and Action's endlessly loving and transformative relationship. The entirety of our actuality is a spiritual plenum, which means that it is composed of Value's autopoiesis in new centers (metasystems) of action-centers. These centers-of-centers apply further free-energy minimizing transformations in a positive feedback loop, driving evolution towards the emergence of greater complexity-consciousness and more-perfect images of the Good.

Our present concerns have been the physical and metaphysical underpinnings of these processes, and the various strands of religion, alchemy, psychology, and other domains which fall within the larger domain of transformation. We have seen, through the Mysteries of Eleusis and alchemy in particular, that ritualization and symbolization are important aspects of the cultural accumulation of transformational affordances. As in, alchemy is exemplary of a ritual of transformation which also tends to embody itself in symbols, which are like super-condensed maps retracing general outlines of ecstatic journeys. What we need next is a more detailed map which reveals every step of this road, and a game-like stigmergic arena in which the evolution of these maps is the natural result of play. This is not unlike how people engage in the Glass Bead Game within Hesse's novel of the same name, which he describes poetically below.

Hermann Hesse: *"Old insights with new symbols recombined,*
So that in minutes or in hours as I read
I traced once more the whole path of mankind,
And all that men have ever done and said
Disclosed its inner meaning to my mind.
I read, and saw those hieroglyphic forms
Couple and part, and coalesce in swarms,
Dance for a while together, separate,
Once more in newer patterns integrate,
A kaleidoscope of endless metaphors --
And each some vaster, fresher sense explores."[626]

In what follows, we will lay out the necessary pieces of a universal language along with a method for scaling it up as we did with other systems within the metasystem of our hyperorganism. The poetic fragment above, from

Hesse, hints at these themes, and we will continue to use the eponymous game of his story to convey the full scope of our metarevolutionary goals. Taking forward what we have just discussed about the justification for seeking a universal language, we must now imagine a kind of game in which the evolution of this language takes place. Stated otherwise: it is not enough to desire a universal language; we must find a way to coax it from some subterranean place, as a seed which has yet to sprout.

Meaning, an always-available challenge, blooms as a universal language composed of elemental and complex symbols. These symbols, on the analytical or reductive end, convey the most basic features of reality, such as the energy transformations found in Energese. The symbols of that language convey all of the most fundamental, simple transformations of the "energies" from which it gets its name. And an exact description of every energy transformation (every action) is possible through combinational synthesis of simple symbols into complex diagrams.

H.T. Odum & Elisabeth Odum: *"When the language of energy is used, all kinds of systems can be examined comparatively, including ecosystems, economic systems, geological systems, meteorological systems, and cities. Similar patterns of use of energy occur in all these systems. A chain of energy-transforming units builds order and increases the quality of part of the energy."*[627]

Carefully drawn out, these diagrammatic metasymbols have practical, scientific, ontological, and moral significance. And their articulation therefore stands as an important part of our present goal, which is nothing less than a stigmergic actualization of meaning—in the form of a game, whose emergent property is progressively perfected fluency in a universal symbolic language, within the shared medium of the Good.

Thus, Energese is part of our *characteristica universalis* because it communicates the most basic energy transformations which compose actuality. But it also needs some additions and expositions in our present context. Importantly, it could be taken as part of the most literal and all-encompassing power-ontology (nihilism) one could imagine; or similarly interpreted as the linguistic spawn of various Flatland ontologies which deny that there is anything "beyond". But an expanded and reimagined Energese is

actually part of an urgent spiritual project as much as it is a language for energy transformations. To make it into a vehicle for optimism rather than nihilism, we must remember that a language of Action is really a language of value-in-action. The underlying metaphysical optimism of our present theory of transformation is therefore its saving grace.

As it stands now, the relative value of a diagram built with such symbols may be intrinsic in its design, but ultimately left to an observer to judge. There is no overt way to communicate about the value we perceive in its traditional palette of symbols. If System 1 loses 20% of its incoming energy as heat energy (entropy) while doing useful work, and System 2 loses 30%, you can map that out in Energese, and it will be implied that one system is more efficient than the other in whatever energy transformation context we are speaking, whether photosynthesis or the creation of art.
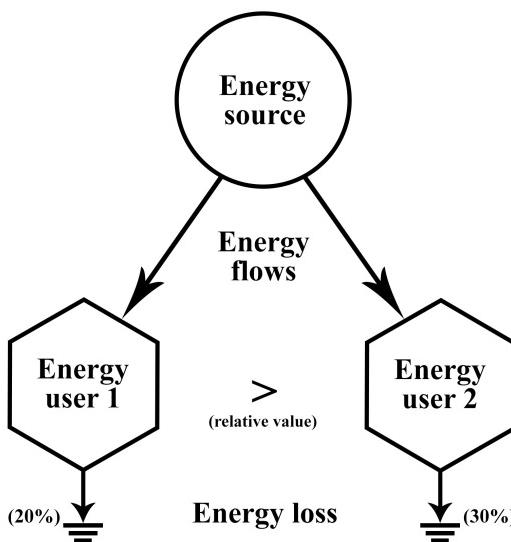
The Energese diagram shows two similar energy users, which comparatively lose more or less incoming energy as waste. In other words, one is more efficient than the other. By including additional symbols from math and logic, one can make explicit evaluative claims about the efficient use of energy. In this simple example, there is nothing to distinguish the two energy-using systems other than their relative efficiency. As a metasymbol, it is nested within a worldview which connects energy use to morality, and it conveys this correlation using a universal symbol language.

Which is to say that the symbols of Energese can currently only speak about meaning covertly—as in, through the objectivity and efficiency of one Energese diagram compared to another. But value is a basic, inextricable feature of the energy transformations this language describes, so we must find a way to communicate more directly about value-in-action.

The spiritual component (metaphysical value) of the energy that Energese describes is between and beyond everything we experience—as the lucid dreamer who is both standing inside and outside his dream. We have "physical" processes which are transformations of energy in the usual scientific sense—and this makes Action an essential part of reality. But, in the optimistic view, Value is also a fundamentally real feature of our universe; and, in fact, the two are never separate, and exist in a plenum of immortal unities called monads. All of the action in the universe happens in integers of Planck's constant, which is the smallest amount of action in which value may be embodied. As such, we can say that love, or Eros, is rather like a unifying force between the other forces recognized by physics. Value and Action are the most fundamental components of reality; they are always connected; and it is love which connects them.

Eric Steinhart: *"Our best science appears to recognize only four fundamental forces: gravity, the strong nuclear force, the weak nuclear force, and the electromagnetic force… Fortunately for spiritual naturalists, the thesis that there are only four fundamental forces is somewhat sloppy. It is more accurate to say that there are only four fundamental exchanges which give rise to forces… Many religions and religious philosophies say that ultimate reality is a kind of primal energy (such as qi, mana, manitou, teotl, pneuma, and so on)."*[628]

Ken Wilber: *"This subtle 'life energy' is an energy that exists in addition to, or along with, the four standard energies or forces recognized by conventional physics."*[629]

Eric Steinhart: *"This energy is often described as a vital power animating living things, as a spiritual force directing the organization of matter, or as a divine creative power which generates all things. By refuting older conceptions of primal energy, modern science opens the door to new and more precise conceptions. Primal energy is referred to here as 'spirit'. But*

spirit is a natural power… Spirit drives the evolution of complexity at all levels of existence."630

Ken Wilber: *"[This] fundamental, intrinsic, evolutionary drive…to evolve higher and higher wholes is the same force that produced mammals from dust and [the Integral Stage of development] from Archaic—a drive that Whitehead called 'the creative advance into novelty' and Integral calls 'Eros'… Eros is a self-organizing force responsible for the ceaseless drive to higher and higher wholes, which are created...by evolution itself, which Erich Jantsch defined as 'self-organization through self-transcendence'… This Eros…creates a 'transcend-and-include' movement to ever-higher, ever-more conscious, ever-more complex holonic forms… [And so] it is you who were here when the Big Bang occurred. It is you who were present as atoms came together into the first molecules. It is you who watched as molecules became the first seeing cells in the first complex organisms."631*

Eric Steinhart: *"Thus, spirit [or Eros] drives all physical systems from lesser complexity to greater complexity… The Thermodynamic Argument for Spirit…goes like this: (1) All physical processes far from equilibrium tend or strive to move from disorder to order. (2) This tendency or striving is the expression of an extropic [negentropic] force. (3) This force is spirit… Spirit drives matter to organize itself; it is the power of self-organization. Spirit drives the evolution of dissipative structures, such as living organisms, to greater complexities. Spirit emerges right away; it is original and universal. It begins with the Big Bang; it acts on all physical processes in our universe… These ideas motivate the Leibnizian Argument for Spirit... Those premises say that every cosmic form strives for actuality. But if those forms strive, then they are animated by some abstract power. This power aims at the maximization of comparative value… Therefore spirit…gives concrete existence to valuable abstract cosmic forms… Spirit is a natural creative optimizing power; it is the power of self-surpassing in all things."632*

We can say, simply, that "Spirit" or Eros is the quintessence or unifying principle of the fundamental exchanges/interactions of physics. It is both optimistic and naturalistic. It simply names the emergent behavior of a universe based on known laws of physics and thermodynamics. This natural Spirit is experienced as: the creative impulse of the cosmos; its tendency to

pattern itself with complexity-consciousness; and an evolutionary complexification which is eternally entwined with value-actualization, meaning discovery, and moral duty. It adds nothing supernatural to the laws of physics, and only recognizes that value is natural and real; or, in other words, that action-quanta may be the ultimate, most fundamental unit in a limited sense, but that monads, as units of Value lovingly embodied in Action, better capture the idea that such "material" units are always full of meaning.

Action (or *Actus Purus*) is the Becoming (bodily inspiriting) of the Good, and our metaphysical system demands that Value and Action are lovers in the same reality—and, indeed, are the parents of everything in it. In other words, the Good has always been real and possible in the absolute, and the Sun and Earth have since begun enacting a relative microcosm of Value and Action's original cosmic drama.

What we need for our universal language, then, is: A collection of simple symbols, an idea about the connection between simple symbols like those of Energese and more complex symbols (like the ones produced through alchemy or other spiritual, religious, or ecstatic practices); the understanding that it is a way of communicating directly about both physical and spiritual energy (both of which are natural and real, and in being so named simply tells us that Value and Action are eternal lovers whose mixture pours into us and fills us with beauty, wisdom, and meaning); and recognition that the perfection of energy transformations is the ascent of Freedom and the purification of Love.

This means that alongside the basic symbols of logic and Energese we need, at the very least, some new symbols to express the transformations of spiritual energy (or Eros) that defines the plenum of value enveloping all experience. That is what separates our view from the pathologies of nihilistic, meaningless power-ontologies. A proper *characteristica universalis* could communicate all the basic actions of the universe, and since the first action was the Good becoming actual, all subsequent transformations are nourished by this primordial energy source, to which we remain connected via love. Every act of free-energy minimization is the stewardship of a finite resource in pursuit of potentially infinite value.

Energese without value-expressive symbols is like the Flatland worldview which analogically denies the connection between Is and Ought (or denies pure Being altogether). A set of basic symbols which can express Value, on the other hand, along with Action (energy transformations which are relative expressions of Value—notice how this reverses the nihilistic claim that values are expressions of Power), is a philosophical language with morally-soaked prose. It is the means by which our spiritual plenum may give voice to itself. Because the Good is absolutely real and yet tantalizingly ineffable, what we seek is like a walk towards a horizon: Directed towards some end which we can imagine, but which will always recede as we approach it. Symbols, in their unique mode of communication, are the bridge "between worlds"—the linguistic counterparts of the shamanic, alchemical, ecstatic experiences which, similarly, are any action-center's lightning-like, inspired connection between the transcendent absolute and our immanent, relative experience. Our horizon-chasing fluency in such a language will form the basis of our never-ending actualization of the Good.

When we stigmergically co-create a universal symbolic representation of perfected value-in-action, we are like travelers in unexplored territory. Our footsteps leave traces which others may follow—or choose to ignore or alter. The theoretical end of the journey is the perfect actualization of possible Value. One's route is not one of literal steps, but rather a hierarchical system of symbols which may be judged, on a basis of natural laws and real morality, against all other possible routes.

This mode of universally applicable analogical mapping will be capable of expressing, and therefore comparing hierarchically, all energy transformations, all processes, all symbolic and analogical connections, and every possible ontological and moral truth. In the same way that two sentences in English may be judged by how well they convey some meaning, two diagrammatic metasymbols built from Energese and other symbols may be judged on how accurately they convey the perfection of the actual Good from its seeds of possibility. Alchemists, ultimately, are ecstatic linguists striving for fluency in this universal language—which is why our present goal can be seen as a scaling-up of alchemy and the other imaginative, transformational experiences we have discussed.

So, in addition to the contribution of Energese, we can us some simple symbols (or signs) of math and logic, such as "<" and ">" to express things like relative value between a pair of systems, or in the interconnections of many systems, and bring the *characteristica universalis* to fruition as a way to make formal ontological statements (which are also predictions and wagers) about the nature of the Good. While, in some respects, this leaves us caught in relativity, because we can only express value by way of comparison, these two symbols are the building blocks of hierarchical arrangement in diagrams (or metasymbols) built from simple and complex symbols. This, at least, attains to the Good itself, because it speaks in the same language as the Good's first emissary: Action.

Another pair of missing symbols are ":" and "::" ("is to" and "as"), which are the most direct and explicit way to create analogies—although all symbols can be taken as implicitly analogical. This pair of symbols, however, will make our *characteristica universalis* feel more like a naturally-spoken language, and allow for the explicit expression of analogical synthesis—which may follow the 1-2-3-4-1 pattern, the movement towards quaternities and new unities in the form of quintessences, or a general mandala-like integration between unity and multiplicity.

Using these symbols of direct analogy, along with our last pair (expressing relative value), would yield a metasymbol that could express that one analogy is better (more truthful) than the other, among other uses. It can also be a bridge between diagramming physical and spiritual energy systems, or, indeed, making creative, playful, inspired connections between anything and everything. We have been narratively expressing, in English, the symbolic relationship between the Sun and Earth; our new language could do this directly with its symbols.

Leibniz had his own collection of simple concepts (ideas) from which all others might be formed. These, and possibly other, elemental ideas would be another likely addition alongside Energese on the "reductionist" end of the symbolic spectrum.

Hidé Ishiguro: *"Leibniz was convinced that signs were necessary for thinking. We do most of our thinking in words, but even when words are not used some other kinds of signs, or diagrams, or pictures are. 'Ask yourself*

Basic Symbols

Mathematical & logical

Symbol	Description
$>$, $<$	Less than, greater than
$\land$, $\lor$	And (conjunction), or (disjunction)
$\neg$	Not, negation
$\top$, $\bot$	Always true, always false
$:$, $::$	Is to, as
$\Rightarrow$	Implies; if this then that
$\Leftrightarrow$	If and only if
$\exists$, $\exists!$, $\nexists$	There exists, there exists only one, there does not exist
$\therefore$, $\because$	Therefore, because
$\Box$	Proves, it is provable that

whether you can perform any arithmetical calculation without making use of any number-signs,' he writes. The question then is, how should we construct the correct syntax of our sign language, so that every well-formed formula would express a possible thought, and every provable formula expresses true thoughts? The 'Ars Combinatoria' was to be such a system of formal logic more comprehensive than that of Aristotle. Not only would it enable one to see whether or not a proposition followed from other propositions; it would enable one to see how a proposition which appeared simple could be analyzed into simpler constituent concepts on which both the meaning and the truth of the proposition were based. Leibniz believed that if the 'alphabet' or the basic simple concepts of human thought could be given, then all other concepts and propositions could be seen to be logical complexes of these simple notions."[633]

Gottfried Leibniz: *"If we proceed to seek the elements of the elements, we shall come at last to primitive concepts which have no elements at all, or none which we can explain to a sufficient degree. This is the art of dealing with distinct concepts… All derivative concepts, moreover, arise from a combination of primitive ones, and the more composite concepts from the combination of less composite ones."*[634]

Hidé Ishiguro: *"Thus, if we gave characters or signs to these simple concepts, all other concepts could be expressed as a result of operations based on them… We will be enabled to see the logical relation of concepts by contemplating the signs alone. We will have a mechanical way of checking whether we have a clear and precise grasp of the complex concepts we are considering."*[635]

Anthony Stevens: *"Through evolution we have acquired the capacity to use symbols to connote concepts, and this development has had psychological consequences of incalculable importance. For, once we have formed a concept of a thing or a process, we can play with it in the imagination; the object of our thinking no longer needs to be present; we can reflect on it in its absence. What is more, we can relate one concept to another and, through their interplay, create myths, arts, and religions and make new scientific discoveries."*[636]

Hidé Ishiguro: *"In an article entitled 'Simpler Terms' Leibniz writes that it is important to enumerate the simplest terms (concepts) by which other*

terms can be defined. He suggests that all concepts can be ultimately reduced to the constituents of the concise definition, whatever that may be, of the following terms: entity, substance, attribute, positive entity, absolute, the same, one, successor, prior, posterior, such, how much, that which is included, number, having a position, change, acting on, being acted on, intending to act, position, to be still, to intend or aim, power or capacity. These, then, were the most basic notions for Leibniz, as far as he could go, and so the simplest concepts would be those needed to define the above notions. We should get nearer to the simplest concepts by asking ourselves how we could define, if at all, the concept of a successor, or being the same, or number, and so on." [637]

All of this gets us a bit closer to our ideal language which at once describes and acts upon the world. We are, remember, permeable creatures whose perceptions and appetites ripple out in mimetic reflections; thus, as we discover a connection and actualize it in symbolic form, the produced symbols proceed to pattern us with increasingly perfect selfhood.

The present discussion will, of course, need to leave the *characteristica universalis* as an open-ended challenge. It can't be completed in one book or by one person. Rather, as our hyperorganism awakens, this will be the language it learns. Leibniz's "simpler terms", familiar signs of logic and math, and Odum's Energese stand at least as a good starting place for one end of the spectrum of symbols which might compose a universal language—one that at once communicates scientific, moral, and spiritual truths.

This leads to our next point, which is how we get from these symbols to ones like John Dee's alchemical metasymbol, the Monas Hieroglyphica; and how do we move between the two, both conceptually and as a matter of embodied, symbolically-informed practice? It is to be expected that when you get to the point of spiritual systems thousands of years old, you will find highly-developed, highly-complex symbols (or metasymbols) expressing more basic symbols.

J.E. Cirlot: *"Symbols, in whatever form they may appear, are not usually isolated; they appear in clusters, giving rise to symbolic compositions which may be evolved in time (as in the case of story-telling), in space (works of art, emblems, graphic designs), or in both space and time (dreams, drama)."* [638]

Basic Symbols

Alchemy

Symbol	Description
☿	Mercury, spirit
🜍	Sulfur, soul
⊖	Salt, body
△, ▽, ◬, ▽	Air, earth, fire, water
☉, ☼, ☀	Sun, gold, heart, monad
☽	Moon, silver, brain
Q	Quintessence
⊕, ☐	Philosopher's stone, perfection, unity, immortality

It would take a great amount of space to express all of the energy transformations and metaphysical propositions that are expressed in something like the Cross—yet it could be done. All of the symbols of all of the great religions are highly-condensed metasymbols expressing a great many simple symbols, whose content is every possible (physical and/or metaphysical) transformation, and the analogical relationship between them all.

Both ends of this symbolic spectrum, the simple and complex, are useful and necessary as we proceed with our moral task of actualizing the Good. The Sun, as a symbol, reminds us that Earth is never without goodness as we are never without its rays—the Good is the primary metaphysical energy source.

Iris Murdoch: *"There is a place both inside and outside religion for a sort of contemplation of the Good…; an attention which is not just the planning of particular good actions but an attempt to look right away from self towards a distant transcendent perfection, a source of uncontaminated energy, a source of new and quite undreamt-of virtue… This is the true mysticism which is morality."[639]*

And the Sun is also the physical energy source found at the start of all our earthly transformations. Both of these domains of energy can be mapped precisely with our universal language. Such a goal was similarly expounded in the course of Hesse's work of philosophical fiction, *The Glass Bead Game*. His teasing hints about the game, which is never fully described, are at the very least evocative of a real-life game we should seek to play—one which involves the imaginative, analogical synthesis of everything.

Hermann Hesse: *"The Glass Bead Game is thus a mode of playing with the total contents and values of our culture; it plays with them as, say, in the great age of the arts a painter might have played with the colors on his palette… Throughout its history the Game was closely allied with music, and usually proceeded according to musical or mathematical rules. One theme, two themes, or three themes were stated, elaborated, varied, and underwent a development quite similar to that of the theme in a Bach fugue or a concerto movement. A Game, for example, might start from a given astronomical configuration, or from the actual theme of a Bach fugue, or from a sentence out of Leibniz or the Upanishads, and from this theme, depending on the*

Complex symbols

Alchemy

Symbol	Description
	Monas Hieroglyphica
	Sigillum Dei
	Rosy Cross

intentions and talents of the player, it could either further explore and elaborate the initial motif or else enrich its expressiveness by allusions to kindred concepts. Beginners learned how to establish parallels, by means of the Game's symbols, between a piece of classical music and the formula for some law of nature. Experts and Masters of the Game freely wove the initial theme into unlimited combinations… It represented an elite, symbolic form of seeking for perfection, a sublime alchemy, an approach to that Mind which beyond all images and multiplicities is one within itself… The symbols and formulas of the Glass Bead Game combined structurally, musically, and philosophically within the framework of a universal language…[which] strove in play to achieve perfection, pure being, the fullness of reality."[640]

With this fictional but prescient outline—of a game-like, musically-inspired, philosophical pursuit of perfection in the form of a symbolic language—we may now take up our own pieces of this puzzle and form a complete image of our metarevolutionary goals. What we desire is the emergence of a universal language composed of symbols and the analogical connections of everything; such that it will be as capable of describing something mundane, like the flows and transformations of electrical energy as it journeys towards an outlet in your home; or something as monumental as the actualization or destruction of the Good as it evolves through the loving mixture of Value and Action; and finally that it is conceptually and practically joined with the ideas we explored about our hyperorganism.

Taken together, we may apply what has been said above to the creation of a "symbol game". The idea, in short, runs as follows: The more simple symbols like those of Energese, along with more complex symbols, may be constructed into diagrams, which are metasymbols conveying unique patterns of morally-heavy energy transformations; these diagrams would be minted as NFTs by their creators; individuals would be able to buy and sell "shares" of these (as in shares of stocks in a financial market).

Similarly, an adjacent prediction market would allow people to bet on the relative and contextual value of these NFTs (e.g. answering the question "which Energese NFT expresses the most efficient physical energy production systems with the least amount of externalities?"). The confluence of personal incentives (to profit from ownership in and prediction of the most valuable

NFT Marketplace

- All metasymbols are minted as NFTs

- Users may buy/sell shares of these, and may also generate

  new NFTs through a combinational synthesis of other NFTs

- Users who mint NFTs, as well as those who own shares,

  will earn royalties when they are "licensed" for use within

  other NFTs

- Individuals, businesses, or governments can also license

  these NFTs directly

NFTs) and social incentives (to collectively power a system with emergent properties, to the benefit of all) means that this symbol game will gradually but surely converge on the best possible energy transformations in any domain —applying to physical and spiritual energy alike. This is part of the answer to a question posed earlier: How does the Good self-organize? Clearly, it requires a combination of stigmergy, challenge propagation, blockchain technology, NFT marketplaces, prediction markets, and the individual-collective alchemical generation of symbolic diagrams and other increasingly complex symbols.

With an NFT marketplace and a prediction market, anyone can "mint" an idea as an NFT, or bet on (predict) the value of these NFTs instantiated in specific contexts. This sets up a game that individuals have an incentive to play, whether they are following a more individualistic or social orientation. In other words, the symbols generated through this process will emerge spontaneously, due to incentive compatibility, with no need for external coercion.

NFT Prediction Market

- Metasymbols which are minted as NFTs will be the basis for a prediction market
- Those who participate place bets on counterfactuals relating to the instantiations, interactions, and future results of metasymbol NFTs
- This further aligns individual economic incentives with the collective interest of making good predictions
- Those who create the best, most useful, most creatively beautiful metasymbols, as well as those who make accurate predictions about their use, will stand to gain the most.

The most straightforward justification for attempting this synthesis of purpose and praxis is to complexify the gameplay described by Hesse. He imagined a sort of aristocratic institution which was highly separate from the rest of society, and yet attempted in some ways to integrate itself in this larger world. The separation and disharmony is something the novel critiques, especially through a personification of each of these "halves" in two of the main characters.

Hermann Hesse: *"You yourself take the side of intensive cultivation of the mind, I the side of natural life… Your function has been to point out how natural, naive living without discipline of the mind is bound to become a mire into which men sink… And I for my part must remind you again and again*

*how risky, dangerous, and ultimately sterile is a life based purely upon mind…
Why could an individual not cherish and unite both within himself?"*[641]

For our purposes, we can imagine his "Castalia", where the elite game players lived, has been totally integrated into the world as a whole. It will be played by all at every moment of the day. And the flights of ecstatic inspiration which the game is built upon will be events experienced by whole communities at once, and not just by individuals. A symbol game allows the scaling up of this kind of play through stigmergic interaction. In this way, we can appreciate why Buckminster Fuller, too, stressed the universality and accessibility of games. We draw inspiration, to make the discovery and mastery of our universal language a game-like forum open to all, from what Buckminster Fuller described as a "World Game", "World Peace Game", or "great logistics game".

Medard Gabel: *"The World Game that Fuller envisioned was to be a place where individuals or teams of people came and competed, or cooperated, to 'Make the world work for 100% of humanity in the shortest possible time through spontaneous cooperation, without ecological offense or the disadvantage of anyone.'… The logic for the use of the word 'game' in the title is even more instructive. It says a lot about Fuller's approach to governance and social problem solving. Obviously intended to be a very serious tool, Fuller chose to call his vision a 'game' because he wanted it seen as something that was accessible to everyone, not just the elite few in the power structure who thought they were running the show."*[642]

As with the music-like compositions in the Glass Bead Game, we must at once utilize our scientific, artistic, and spiritual capacities. Participation in our own game of symbol-play will be something like making predictions about the prices of stocks in a financial market, taking a pilgrimage to Eleusis for a communal and mythically-endowed transformational experience, writing a song beautiful enough to change the world, and formulating a mathematical proof. Indeed, it would be all of these and more at once, in a dynamic system which tends towards more perfect comparative and analogical mappings. It will tell us about the nature of love, the thermodynamic principles of complex systems, the metaphysical

underpinnings of all political ideologies, and the connection between all of these.

The overall idea consists in placing the challenge of discovering and elaborating a *characteristica universalis* within other challenges we've discussed. This includes ideas like our ongoing complexification as a hyperorganism, finding good solutions to game theoretic dilemmas, and putting in place all of the necessary elements for our ongoing transformation. So we must take this system which includes symbols, myths, and rituals and nest it within another system, our symbol game, which is market-like in its use of stigmergy to achieve a scaling-up of ordered complexity.

In that setting, the journey towards perfection of our universal language is the inevitable tendency—stemming from incentive compatibility, or, in other words, the condition where the goal of the system and the goals of its holons align. Just as people accrue great wealth from participation in various other markets, so too will people accrue great meaning through our collective discovery of a universal language of value-in-action.

As in the Glass Bead Game, there is a motivation to proceed towards more comprehensive, more beautiful, and more complex symbolic synthesis; as in Fuller's World Game, there is a motivation to proceed towards the most elegant, effective solutions for meeting humanity's fundamental needs; and as in the theory of hypergames, and all of the principles of game theory it contains, there is a motivation to find solutions which are evolutionarily stable, incentive compatible, and have positive emergent properties from as many simultaneous perspectives at once (i.e. fulfilling the moral demands of natural law).

Because symbols have the special property of openendedness, we can, together, take on the eternal challenge of meaning—approaching it in degrees of perfection. And we will never arrive at a stagnant and dogmatic ideology which fails to reinvent itself along with the ebbs and flows of culture. Instead, one may imagine a sheet of music notes which conveys the general pattern of a song without dictating the exact artistic interpretation which will bring it from possibility to actuality.

Earlier we met a character named Donnie who participated in a prediction market. In that setting, one buys and sells "shares" of predictions,

What's in an NFT?

Types of content
Basic symbols of math, logic, universal constants, practical units, and Energese
Complex symbols which combine, explicitly and/or implicitly, multiple more basic symbols
Natural languages such as English; especially narrative and mythological content with embedded symbolism
Diagrammatic representations of a multitude of simple and complex symbols, showing relationships, analogies, hierarchies, feedback loops, and other dynamic interactions
Matrices and other ways to model interactions (or games), strategies and decision theories
Blockchains, Smart Contracts, and DAOs
Predictions, scientific theories, constitutions, and artistic creations

as one would buy shares of a company's stock in a stock market. A prediction market, if it is sufficiently integrated into a society, is functionally a "decision market". As in, people, governments, organizations, and economies will be influenced by the collective intelligence of this prediction-based center-of-centers. This is a kind of game which utilizes incentive compatibility—a state in which the goals/incentives of an individual and of a society or other metasystem are aligned. If one "looks in" on such a system from the outside, what one sees is an individual like Donnie pursuing internally-coherent goals and value-hierarchies and, simultaneously, communities progressing towards perfection.

A prediction market can also be oriented towards nefarious ends, and there is no guarantee that greater collective intelligence will lead to greater morality or justice. Donnie notices that this symbol game is different. It's not just an open-world arena in which one plays with predictions and counterfactuals. It's more like that game where people collectively write a story by adding one sentence at a time. Nobody knows exactly where that story will go, but there is a sense that the final product will be neither entirely personal nor entirely collective. It will be the most important story ever written.

And so it is with this high-stakes game of symbol-play. One can create a non-fungible token (or NFT)—which is like a property deed for ideas—and the more people who "buy in" to your idea, the more valuable it becomes. This means that Donnie has an incentive to imagine and share the best ideas, and the other players of this game have an incentive to locate and buy shares of the best ideas. Similarly, there is a special branch of our decentralized prediction market in which people like Donnie bet on the value of these NFTs if they were to be instantiated within various institutions (and/or other counterfactuals based on the application of the metasymbols encoded in these tokens).

This means that as the game progresses, we will see an articulation of meaningfulness which tends towards perfection. Similarly, should we choose to live by and through the symbolic outputs of this game, we will see a perfection of love—because perfect love is equal to perfectly bonocentric action, and perfected action is equal to the moral fluency which follows from our collective authorship of the actual Good. When we learn to speak this

universal language, and when its symbols echo through our homes and schools and governments, we are learning to love more perfectly. Which, as we now know, means that we are learning to more perfectly connect Value and Action.

Should someone like Donnie discover a more efficient design for solar panels or a more truthful and beautiful articulation of meaning, the result is an opportunity to become better stewards of Action (and the Value of which it is the body). This symbol game we are imagining would thus lead towards an increasingly encyclopedic compendium of ontological, moral, and practical facts. Our naturalistic moral realism says that energy always loses some of its ability to do work whenever it is transformed, and therefore that perfect stewardship of energy is the taproot of all other questions in ethics. It is in this sense that we can say that perfecting this universal language is the best way to fulfill our duty to actualize the Good. As our hyperorganism develops, the interconnected systems we've discussed will, hopefully, come together into a metasystem with synergistic and emergent properties over and above the properties of its holons. Among the most important subsystems composing this center-of-centers is this proposed game which leads towards increasingly perfect and universal symbolic mappings of everything.

To love more perfectly, one must make the imaginative, ecstatic leap beyond oneself. One enters a timeless domain of eternal absolutes and returns from that land of possibility with gifts which can only be called sacred. In this endeavor, one becomes a center of perfected love, and lays the foundation for the actualization of wise and universal charity—which is the Leibnizian definition of justice. Justice is a potential quality of Action. And action happens in quantum steps and holistic reconfigurations. The minimum of action, described by Planck's constant, is, in the present view, the smallest body in which Value may become fully real. Value and Action, joined together in love, therefore exist as monads: units of value-in-action. Every change is a relational/hierarchical/organizational change in a plenum of monads, and those changes are described, imperfectly, by our budding universal language.

It is clear, then, that the goal of perfecting love has a great deal to do with perfecting this language. To paraphrase what Iris Murdoch has said, we create images which we then come to resemble. The more perfect our

symbolic language, the more perfect we become as we gaze into its reflectively transformative waters.

While discussing this path which leads us out of our meaning crisis, we explored ideas with implications for addressing any metacrisis: Our revolution in meaning is, in turn, a symbol which points beyond itself into the metarevolutionary domain. No revolution will ever be the same.

Before we conclude this topic, it seems wise to at least point in the general direction of the social, political, institutional changes which might follow from the metarevolutionary goals proposed so far. So the following section will provide reflection on more of the "downward" movement of philosophy—i.e. integrating the experience of transformation into culture.

2.2.3

THE PHILOSOPHER GOES DOWN

"From the moon, the Earth is so small and so fragile, and such a precious little spot in [the] Universe, that you can block it out with your thumb. Then you realize that on that spot, that little blue and white thing, is everything that means anything to you—all of history and music and poetry and art and death and birth and love, tears, joy, games, all of it right there on that little spot that you can cover with your thumb. And you realize from that perspective that you've changed forever."[643]

- Rusty Schweickart

It should now be evident that people are always simultaneously the agents and objects change—transformers and transformed. Similarly, economics, ecology, and psychology are all concerned, in their own ways, with the dynamic relationships of monads (perceptive and appetitive units which embody value within action quanta). And we are especially interested in their energetic and moral interactions. So we may use alchemy as a way to describe and understand a plethora of possible transformations—it is a material-spiritual metasystem (erasing the falsely dichotomized "two worlds" just as it unifies other unnaturally separated domains like science and religion). It is an art-science-language of action; and it is oriented towards the ritualization and accumulation of transformational affordances, primarily through ecstatic experiences which lead to symbol formation. This leads us to once again take a whole-planet perspective: What are the implications of a philosophy of planet-as-alchemist? And if the planet is an alchemist, how can we as humans be its loving partners, and make every flow of energy a more perfect expression of the Good?

As a human alchemist's laboratory transformations are outwardly the material "ripening" of lead into gold, but inwardly a process of psychological-spiritual individuation of the Self, a planetary alchemist is explicitly transforming the Sun's energy, but implicitly transforming the Good—which the Sun symbolizes.

Mircea Eliade: *"The alchemist takes up and perfects the work of Nature, while at the same time working to 'make' himself."[644]*

Catherine Bygott: *"[This] inter-relationship of the material and spiritual is at the heart of alchemy. The word 'laboratory' is itself an expression of this unification; it contains both the Latin word 'laborare' (to work) and 'orare' (to pray). Alchemy is sacred work."[645]*

J.E. Cirlot: *"[Gerhard] Dorn…alludes to the relationship which must exist between the worker and his research when he asserts: 'You will never make Oneness out of Otherness until you yourself have become Oneness.'"[646]*

Jordan Peterson: *"Redeeming any aspect of that experience, then—whether 'material' or 'psychological'; whether 'self' or 'other' is regarded as the same act—as the act whose purpose is establishment of the 'kingdom of god' (which is simultaneously psychological and social state). 'Spiritual work'*

may therefore be regarded as indistinguishable from 'work on the external circumstances of existence': redeem yourself, redeem the world. Or, alternatively: the attempt to bring about the perfection of the external world may be regarded as equivalent to the attempt to perfect oneself."[647]

Aldous Huxley: *"This teaching is expressed most succinctly in the Sanskrit formula, tat tvam asi ('That art thou')…and the last end of every human being is to discover the fact for himself, to find out who he really is."*[648]

Paul Tillich: *"[If he succeeds], his true being shall become his actual being."*[649]

Aldous Huxley: *"The question that now quite naturally presents itself is a metaphysical one: What is the That to which the thou can discover itself to be akin?… [It is] the divine Ground of all existence [or] spiritual Absolute, ineffable in terms of discursive thought, but (in certain circumstances) susceptible of being directly experienced and realized by the human being."*[650]

Michael Maier: *"The sun, by its many millions of revolutions, spins the gold into the earth. Little by little the sun has imprinted its image on the earth, and that image is the gold. The sun is the image of God, the heart is the sun's image in man, just as gold is the sun's image in the earth, and God is known in the gold."*[651]

Mircea Eliade: *"Gold is the bearer of a highly spiritual symbolism ('Gold is immortality', say the Indian texts repeatedly)… The alchemist… assists Nature to fulfill her final goal, to attain her 'ideal', which is the perfection of its progeny—be it mineral, animal or human—to its supreme ripening, which is absolute immortality and liberty (gold being the symbol of sovereignty and autonomy)."*[652]

Mark Haeffner: *"[And] it is also well known to Tibetan scholars that the mining of gold was strictly regulated by the Dalai Lamas: it was believed that removal of gold from the earth would actually weaken its structure. There are stories of men who have found huge gold nuggets, only to be instructed by the Dalai Lama to bury them again!… Here we see how original alchemy is rooted in an ecological view of the world, a religious attitude of the deepest respect for nature, of fear that to exploit the resources of Mother Earth will bring ruin to mankind."*[653]

Rainer Maria Rilke: *"Their crowns are exchanged for money*

and melted into machines,
and there is no health in it.
Does the ore feel trapped in coins and gears? In the petty life imposed upon it
does it feel homesick for earth?
If metal could escape
from the coffers and factories,
and the torn-open mountains
close around it again,
we would be whole."[654]

Every economic interaction, political decision, and even every brick we construct is an expression of value-in-action. We are transforming physical quanta of Action, and transforming metaphysical quanta of Value. They are conceptual halves, and we are actually transforming the relationships of monads, which contain both halves at once. We seek to be "masters of fire" and perfect stewards of love.

Teilhard de Chardin: *"Some day, after we have mastered the winds, the waves, the tides and gravity…we shall harness the energies of love. Then, for the second time in the history of the world, Man will have discovered fire."*[655]

Knowing this, we can conclude that two systems may be compared through a measure of efficiency—as long as we remember that this measure applies to both of these domains of energy. Material efficiency means providing the maximum fulfillment of needs for all life while reducing harm from all perspectives (e.g. the change from linear to circular economies or from sustainable to regenerative development); while spiritual efficiency means actualizing the Good to the greatest degree possible (e.g. embodying the "power of love" over the "love of power", as in the rival alchemists of Harry Potter and Voldemort, or in the metaphysical victory of a spiritual plenum of monads over the nihilistic ontologies of Flatland).

To embody love in the context of a holarchy of indivisible and unique monads, it would be wrong to advocate for sustainable development—as in, a mode of human existence which "does no harm", but also fails to actively be a good partner to Earth as a whole. The alchemical coloration of our metarevolution is therefore seen more clearly in several interconnected

paradigmatic shifts on the blurry borders of philosophy, psychology, and ecology. The alchemically-informed view of transformation implies practical and institutional changes that are outside the scope of this book; this could include new symbols and myths, arcology, regenerative development, Georgism, and much more which constitutes the "downward" movement of philosophy and cultural transformation.

D.C. Schindler: *"We have proposed viewing Socrates in the Republic as the philosopher who 'goes down.' This would make him, by the same token, the paradigm of philosophy's entry into the public and political sphere."*[656]

To briefly hint at these connections, arcology (a portmanteau of "architecture" and "ecology") is a morally-informed aesthetic. Its union of words conveys a deeper union of purposes—practical and moral. And much of the same could be said for spiritual architecture in general, as in the way a religious philosophy is made physical as a church or temple. And, as in alchemy, it is the kind of choice which reflects an equal commitment to self-actualization and self-transcendence. In short, these themes point to the belief that architecture should minimize our separation from nature, and likewise to maximize our connection to ontological and moral truths. Likewise, Georgism is economic mechanism design as much as it is spiritual reorientation and psychological individuation.

To briefly defend this point, it should be sufficient to say that the heart of Henry George's thought is both economic and metaphysical. It reaches its conclusion, that the land value tax is the best way to fund governmental and societal functions, via two simultaneous routes: the philosophical threads of natural law which say that value is real, and that land (unlike human labor or capital) is something to which we (all lifeforms, or, simply, all monads) have equal rights to by default; and the economic threads which say that the best taxes have the smallest negative impact on efficiency and incentives (which in this case has an inverse correlation with taxes on labor and capital) and the greatest benefit to resource allocation and the good of as many people as possible.

Henry George: *"In all our long investigation we have been advancing to this simple truth: That as land is necessary to the exertion of labor in the production of wealth, to command the land which is necessary to*

labor, is to command all the fruits of labor save enough to enable labor to exist."[657]

Kumhof, Tideman, Hudson & Goodhart: *"Conceptually, the proper definition of the tax base for a land tax is the entire material universe excluding people and their products—including surface land, mineral resources, water, air, sunlight, and the electromagnetic spectrum."*[658]

Henry George: *"[And] if we are all here by the equal permission of the Creator, we are all here with an equal title to the enjoyment of his bounty—with an equal right to the use of all that nature so impartially offers… Vice and misery, poverty and pauperism, are not the legitimate results of increase of population and industrial development; they only follow increase of population and industrial development because land is treated as private property—they are the direct and necessary results of the violation of the supreme law of justice, involved in giving to some men the exclusive possession of that which nature provides for all men."*[659]

Nicolaus Tideman: *"[Therefore,] land value taxation generalizes to the principle that all persons have equal rights to and should therefore pay for their above-average appropriations of natural opportunities."*[660]

Elena Liotta: *"An awareness of these dynamics and their interweaving with geographic, economic, ideological, political and other factors can be used in different ways, depending on the intentions of those who govern."*[661]

This is why we say that a new direction for transformation must necessarily have implications for the way we construct our homes and cities along with the way we construct ourselves and our systems—economic, social, or otherwise. From an individual soul to the soul of a city or hyperorganism, we must attend to a process of mutual transformation towards wisdom, beauty and perfection. We must see the inherent wholeness and value of every monad, and not attempt to justify economic theft through the metaphysical sleight of hand which replaces the *telos* of the Good with the cruel and empty whims of Power.

Thomas Moore: *"If psychology is by definition work with the soul, and if nature and culture have soul, then psychology must concern itself with*

this larger sphere... The world, too, is a patient in need of therapeutic attention."[662]

Ken Wilber: *"[By this account] you no longer look at a mountain, you are the mountain… There is no 'other' here."*[663]

Elena Liotta: *"There are now also new disciplines of study, such as cultural psychology and environmental psychology, that take the relationship between the individual and society beyond the psychology of the subject and the small group, towards an in-depth study of the spaces and places in which human beings pass their existence. From the perception of the infant, to the movement in space of the child…all levels of shared living require new forms to rebalance the excessive abstraction and solipsism that has dominated the discipline of space in the past century, beginning with architecture and town planning."*[664]

Jeffrey Raff: *"[We may also add that] the house is often a symbol of the center and thus of the Self. Clearly it is the Stone, or the place of the Stone where it incarnates…and therefore holds the gifts of immortality and healing for others."*[665]

James Hillman: *"[So] for our psychic health and the well-being of our city, let us continue to find ways to make place for soul."*[666]

Fatemeh Nasrollahi: *"[For this, we can look to] examples from Islamic architectural tradition that engaged in the crystallization and expression of the mundus imaginalis, the realm where invisible realities become visible and corporeal entities are spiritualized."*[667]

As a final look into a possible future, let us consider briefly how the metaphysics of Christian alchemy found its way to America, and where it may yet go. The remains of a stone tower in Newport, Rhode Island will be our point of connection between past, present, and future.

Philip Ainsworth Means: *"The circular arcaded tower at Newport continues to be the most enigmatic and puzzling single building in the United States."*[668]

The Newport Tower, often mistakenly identified as the remnants of a windmill, is in fact the physical representation of the philosophy of Christian alchemy, particularly as propounded by John Dee, the "cabinet-level" alchemical advisor to the first Queen Elizabeth.

Frances Yates: *"John Dee, formerly philosopher-in-chief to Queen Elizabeth…permeated the whole Elizabethan age, from the Queen downwards. That he was the inspiration for Shakespeare's Prospero is very strongly indicated."*[669]

John Dee's reputation may forever be tarnished by his coinage of the term "British Empire", and his influence on the Queen to actualize this empire. However, considered as an alchemist and the mastermind behind the Newport Tower, Dee still has relevant lessons for today's world. Speculatively, our present zombie apocalypse, or meaning crisis, is connected to what was lost around that time. As Jim Egan argues, there was a whole worldview built into the design of the Newport Tower. And we may add that what it embodied was a truly optimistic metaphysics, that, as it was forgotten, gave way to nihilism and our present despair and emptiness.

Charles Nicholl: *"John Dee's major alchemical work, the Monas Hieroglyphica, was first published at Antwerp in 1564… The translator was Thomas Tymme… In [his] introduction, Tymme refers to…'The Hieroglyphicall Unit'…'unit'…being the name Dee himself gave to the Greek 'monas'… This was the first recorded use of the word 'unit' in English…. Dee explained a unit as 'that thing Mathematicall, Indivisible', and this is the idea to be conveyed by 'monas' or 'monad': oneness, indivisibility, unity."*[670]

Jim Egan: *"It seemed to me that [the Newport] Tower was designed by a master: someone who thoroughly understood astronomy, optics, horometry (timekeeping), and architecture. Someone who knew these subjects so well, he could playfully integrate them into a soaring sculpture of stone-and-mortar. Someone who knew that his creative philosophy would forever be an integral part of the Tower—locked in for centuries—available for anyone to decode—yet invisible to most… The [book] Monas Hieroglyphica, the Monas symbol, and his Tower all express the same thing: Dee's cosmology."*[671]

Charles Nicholl: *"[The Monas Hieroglyphica] itself, as a design, is composed of conventional symbols of equal astrological and alchemical import. Its constituents are the signs for Mercury, Aries, Sun, and Moon. The central point of the solar circle also represents the Earth: it is what Dee calls the 'terrestrial center' of the monad… Important for our purposes, it works as*

a talismanic synopsis of the alchemical process… Dee's monad, a hieroglyph of essential oneness, is in this sense a symbol of the Stone, the 'one thing' which the alchemist achieved out of division and plurality… Thomas Tymme… also concluded that Dee's design was symbolic of the alchemical process per se."[672]

Egan aptly compares the "John Dee Tower" to the Statue of Liberty—both were meant to welcome newcomers not only into a new geography, but a new philosophy. Further, if, as Yates suspects, Prospero in Shakespeare's *"The Tempest"* is modeled on Dee, then, as Egan argues, Prospero's island is modeled on Rhode Island, while his tower is modeled on the one still standing today in Newport.

This tower, misunderstood and neglected, is the perfect analogy for what we must recover in order to resolve our meaning crisis and make transformation the partner of the Good.

Charles Nicholl: *"Dee's 'Monas [Hieroglyphica]' is formative of [the view of] alchemy as a philosophy of transformations, whose chemical terms expound a spiritual system."*[673]

Frances Yates: *"[Seen in this way], The Tempest would be one of the supreme expressions of that vitally important phase in the history of [Europe] … Prospero is so clearly the magus as scientist, able to operate scientifically within his worldview, which includes areas of operation not recognized by science proper."*[674]

Charles Nicholl: *"The transmutation of matter and the metamorphosis of the magus: a chemical enactment of mystical themes. This is the keynote of Dee's alchemy."*[675]

Dee and Prospero were both alchemists—or magus-scientists, as was one of the forgotten "founding fathers" of the American alchemical agenda: John Winthrop, Jr. Our current moment, defined as metamodern, seems to be calling out for a return of the magus, and a renewal of a philosophy of transformation which is equally at home in material, psychological, political, and spiritual contexts.

Walter Woodward: *"As a Christian alchemist…John Winthrop, Jr. was a stellar man of his times… In the wake of his passing, contemporaries who summed up Winthrop's contributions to New England consistently noted*

three things: the depth and usefulness of his alchemical knowledge; his commitment to tolerance, especially in religious matters; and his political acumen… He embodied the notion of a fully integrated life, one in which the scientific spirit, social spirit, medical spirit, political spirit, and religious belief were complementary and symbiotic… He and many of his contemporaries believed that religion and science were deeply intertwined… These ideals and aspirations…did not survive the centuries following Winthrop's death any better than Puritanism."[676]

Charles Nicholl: *"[Yes,] the 'chymist' and the 'philosopher' are certainly two increasingly divergent identities… And yet the years around 1600 were the heyday for alchemy precisely because both of these identities were alive and active, and both insisted that the true province of alchemy was man himself, whether the healing of his body or the transforming of his self."*[677]

As we've said, there are certain fundamental pieces of transformation, and historical examples like Eleusis seem to capture many of them at once. It was a physical space for a partially communal, partially individual ecstatic experience, used myths and "elders" as guides for "initiates", and, as a whole, acted as a space for symbolic creation and renewal. Speculatively, John Dee's tower might, had history played out a bit differently, been much like Eleusis: A new spiritual capital for humanity.

The hope in bringing in these historical details is to remind us of the importance of philosophy's "downward" movement. The "upward" discoveries of philosophers must materialize and actualize themselves in multiple ways, including through myths, symbols, rituals, games, buildings, and political-economic systems. When we play our "symbol game", it must ultimately be connected and integrated into all of these domains. All of these systems act together in the flows of transformation.

In sum, everything actual is value-in-action; everything real (possibility + actuality) is the Good experiencing itself; and Action is the Good's heliograph—immanent reflections with a transcendent origin. We are complexes of monads, which are embodied units of value. The Good is Monas Monadum; and our process of Becoming is an endless self-organizing and inspiriting journey towards its Being.

All that separates a planet in crisis from a planet in enlightenment is the quality and object of our love. We say that love is the energy of morality, and morality is good stewardship of possibility's movement into actuality. This makes our metarevolution an escape from the zombie apocalypse, or an unflattening of Flatland. Action in Flatland is pointless and absurd; action in a spiritual plenum is heavy with the duty of moral existence. Every choice counts. Every action transforms the web of relationships which exist in a monadic plenum, and the actualization of the Good results from the fulfillment of our moral duty to love more perfectly tomorrow than we did yesterday.

In the final view, the domain of transformation is a metasystem of other domains such as religion and psychology. Immortality (or gold or perfected value) is the distant point on the horizon which informs the direction of this transformation. It is a transcendent ideal which *"the true magic of spiritual action"*[678] turns into present actuality—just as the lightning bolt joins "Heaven and Earth".

Attention to the Good, it is important to recall, produces a desirable mimetic mirroring—*imitatio bonum*. And it creates a satisfactory metaphysical distance between the Ego and the Self—or between Man and God, if you prefer—by denying relativism and affirming that there is an absolute which exists and includes the relative within it.

Through this we avoid nihilistic ontologies where meaning, values, and/or morality are only constructed within a cave and never discovered beyond it; where experience is immanent but never transcendent; relative but never absolute. And a proper understanding of the Good similarly avoids the schism which occurs in the "Two Worlds" fallacy, or any *"deus absconditus"*[679] situation, as Mark C. Taylor says—to paraphrase: God has had a tendency to become so absolute as to abscond from our daily experience (the spiritual absolute being considered a second and transcendent world, thus emptying or flattening our own), or so immanent as to be lost in what D.C. Schindler calls tyrannical relativism (the loss of any absolute which could include and transcend the relative, or give it grounding and reality).[680]

And by exposing the potential perversion of the quest for immortality (e.g. love of literal gold, love of personal power, or endless life without ongoing transformation towards greater meaning), we leave room for this

timeless and timely narrative to be a transformative waypoint: We shall be transformers of the Good's energy, and be transformed ourselves, through the symbolization of, and playful participation in, love, into states of greater perfection.

We have claimed that experiences such as dreaming, active imagination, shamanic ecstasy, and the Great Work of alchemy share the hallmarks of the pursuit of complete personhood, experiential abundance, morality, and, in a word, immortality. Our philosophy, which is a *"way of life"* in the spirit of Pierre Hadot, includes all of the practices and technologies we've been exploring—and it all leads towards becoming fully ourselves, becoming free, and obediently fulfilling our obligations to love the Good to the greatest degree possible.

Iris Murdoch: *"Good exerts a magnetism which runs through the whole contingent world, and the response to that magnetism is love."*[681]

In sum, we must make it our job to treat everyone and everything as though our very existence depends on their spiritual development and depth of soul—their self-actualization and self-transcendence—because truly it does. We must be just as concerned with the immortality of our neighbor as we are with our own. Our metarevolution seeks to be those first steps towards a loving, moral, beautiful, wise, free, enlightened, and therefore immortal society. We are optimists because we believe there is a Good which exists in absolute possibility, and therefore may be experienced actually, as long as we fulfill our moral duty to pursue perfection through the purified energy known as Love. It was said from the outset that this book is the story of lovers, and a few more things must be said about the relationship of Value and Action before we conclude.

2.3

CODA: LOVE

"Conflagration and coagulation occur together. Desire and its object become indistinguishable. What I burn with attaches me to it."[682]

- James Hillman

We are nearly finished, intrepid reader. Let us celebrate the love between Value and Action.

Love is not an after-the-fact addition to our story so far—it is the story. This is meant to be a scientifically and metaphysically exact statement. There is no better name than Love for the emergent tendencies of the basic forces (or exchanges) of physics. There is a thermodynamic basis for our moral realism, and every action one takes is a transformation of possible value into a more perfected or degraded actual form. A state of perfect connection between Value and Action is our goal—one which remains impossible but undeniably worth pursuing. And in the previous sections we unveiled a symbol-centric game whose explicit purpose is the perfection of love, the reversal of our meaning crisis, and the development of metarevolutionary principles.

Love is the orientation of optimism; while power is the orientation of nihilism. And following the latter of these two human potentials is what leads to the degeneration of meaning, a loss of complete personhood, and a failure to participate in true community—in which the foundational principle is unselfish, sacrificial, charitable love. In the optimistic world, power is not forgotten or disavowed; rather, power-over is transformed into power-with. Or, in other words, hierarchical organization based on dehumanizing domination is replaced with hierarchies oriented towards the universal expansion of depth and development in every soul.

A core metarevolutionary principle we've been elaborating is fractal, holarchic individuality. You are indivisible; you are whole. You are also composed of indivisible unities known as monads. Earth, too, is an ensouled individual. And so, our metarevolution's "unit of analysis" is not the atom or bit or any other strictly reductive "part" within a "whole", but rather the more flexible "holon" which is a contradiction-preserving unity of partness and wholeness. Similarly, we arrived at the idea of a hyperorganism, which is composed of monads, organisms and superorganisms alike, without reducing their status as individuals and ends-in-themselves. A hyperorganism is simultaneously something which can be said to emanate possibility—as a palette of colors opens (and closes) a number of potential actualities to a painter—and also emerges from the self-organization of monads.

The metasystem transition which is bringing about our hyperorganism is a redirection of momentum: We took the principles of complexity which are driving our metacrisis to further inflame itself, and used them to promote new modes of action which scale up in complexity and consciousness in order to meet our present challenges. Similarly, our theory of personal-moral-spiritual transformation redirects us from a collapse into zombie-like meaninglessness, but it also opens up brand new possibilities for social existence in general.

This holistic view also implies games—where a game is a specific breed of complex system composed of choice-makers (extending downward into total determinism, or minimal freedom, and extending upwards into total spontaneity, or perfect freedom). The many agentic decision-makers which compose a hyperorganism are, first, playing a hypergame—in which the first move is the choice between all possible games, and all subsequent play is metagaming *ad infinitum*. The Good as absolute first principle of everything is responsible for the "macrocosmic" (first-order) hypergame: The possibility of perfection is alive in our universe. Morality is found in the categorical imperative to tend the most beautiful actual garden from these initial metaphysical seeds of possibility—the "microcosmic" (second and third-order) hypergames.

And so we arrive at love. Love, like the quest for immortality, is an inexhaustible well of creation. It is wildly dangerous and profoundly necessary.

Iris Murdoch: *"[Love] is capable of infinite degradation and is the source of our greatest errors; but when it is even partially refined it is the energy and passion of the soul in its search for Good… [And] Eros is not…a great god. He is neither a god nor a mortal but a spiritual being residing in between, a daemon, a great spirit… He is, in the strong and eloquent words of Diotima…an alchemist,…[a] spiritual chemist."[683]*

Anaïs Nin: *"[Truly,] the only…alchemist that turns everything into gold is love. The only magic against death, aging, ordinary life, is love."[684]*

Pierre Hadot: *"Diotima's mythical description applies simultaneously to Eros, Socrates, and the philosopher. Of needy Eros, Diotima says: 'He is always poor, for he is far from being delicate or beautiful, as people think. On the contrary, he is rough, dirty, barefoot, and homeless; he*

always sleeps on the ground, in the open air, on doorsteps and in roadways… He sets traps for noble souls, for he is hardy, brazen, and tough; he is always trying to come up with some trick; he wants to be clever and resourceful… He is a fearsome sorcerer, a magician and…a dangerous hunter.'"685

Love is the natural magic of our world. Love is Action yearning for Value, and Value yearning for Action. And it is the common thread of any metarevolutionary response to a metacrisis—not as a trivial, after-the-fact description of our motivations, but as the true description of the ongoing ritual which brings us into closer contact with the Good. Eros is the tendency of everything.

Paul Tillich: *"Eros for Plato is a mediating power, elevating the human mind out of existential bondage into the realm of pure essences, and finally to the essence of all essences—the idea of the Good."686*

Plato: *"Love…is neither mortal nor immortal, but in a mean between the two… He is the mediator who spans the chasm which divides them, and therefore by him the universe is bound together."687*

Iris Murdoch: *"[Thus,] Plato's Good is not a god, it is an impersonal object of love, a transcendent idea, pictured as a magnetic center of vitality (for instance as the sun). It purifies the energy which is directed upon it… [And] Eros is not the Good, he is not even a god, he is a spirit which moves toward Good."688*

Zak Stein: *"[And love] is built into the dynamics of reality itself. The love life of humanity is but an expression of evolutionary love, which pulses through all forms of life… There were billions of years of self-organizing and Eros well before sexual reproduction began… [C.S.] Peirce saw that the theory of evolution and a host of other theories in biology were pointing towards an underlying and self-organizing force at work in evolution; he saw that among the tendencies and forces of nature is a force that unites, synthesizes, and creates higher-order communion among parts."689*

Iris Murdoch: *"Eros is the continuous operation of spiritual energy, desire, intellect, love, as it moves among and responds to particular objects of attention, the force of magnetism and attraction which joins us to the world, making it a better or worse world: good and bad desires with good and bad objects."690*

D.C. Schindler: *"Plato also asserts that a person will become like what he loves and that there is a correspondence between the character of the object of love and the character of the soul that loves it. If this is the case, and it is also true that the philosopher is defined precisely by an insatiable desire for the 'really real,' then it would follow that the philosopher would take on some of the characteristics of this real reality… It would therefore be true to say that the more 'objective,' i.e., bonocentric, one's love becomes, the more things disclose themselves in their truth, and also the more beautiful and desirable they become—precisely because the goodness that is at the root of all of this becomes more manifest."*[691]

Iris Murdoch: *"The activity of Eros is orientation of desire…, a direction of energy, not just a state of mind… [And it] pictures probably a greater part of what we think of as 'the moral life'; that is, most of our moral problems involve an orientation of our energy and our appetites."*[692]

Paul Tillich: *"[Thus,] Eros is the transmoral motivation for moral action…and drives toward reunion with things and persons in their essential goodness and with the Good itself."*[693]

Zak Stein: *"The universe evolves towards more complexity, consciousness, creativity, uniqueness, and Eros, and so does each individual within it. Humans can become aware of this reality, and so begin to self-consciously steer themselves into the strong currents of the evolutionary stream."*[694]

Eros, in its all-encompassing presence, is the autopoietic drive of the universe—a quintessential force whose tendency in actuality is the self-organizing process of evolution and ascending organized complexity. From this it follows that antimorality is nothing more than misuse of this energy, and nihilism nothing more than the endorsement of this misuse.

The speculation of this book is that love is what puts us in touch with the Good, and thereby names any moment's most moral action. Love thereby becomes a shared medium in which we collaborate in a self-transcending search for wholeness, perfection, immortality.

Percy Bysshe Shelley: *"Nothing in the world is single;*
All things by a law divine
In one spirit meet and mingle.

Why not I with thine?"[695]

If, by Eros, the universe is self-embracing, our overarching goal can be summarized as: To perfect the relationship between Value and Action through participation in Love.

Gottfried Leibniz: *"The present is big with the future, the future might be read in the past, the distant is expressed in the near. We might get to know the beauty of the universe in each soul, if we could unfold all that is enfolded in it and that is perceptibly developed only through time."*[696]

Paul Tillich: *"And just this ambiguous character of love enables it to be the solution of the question of ethics in a changing world… Love alone can transform itself according to the concrete demands of every individual and social situation without losing its eternity and dignity and unconditional validity."*[697]

Love is metaethical. It is the energy of moral perfection; and it is a metarevolutionary pursuit of universal justice.

Gottfried Leibniz: *"[Justice is]…the charity of a wise man… Charity is universal benevolence, and benevolence is the habit of loving."*[698]

We have seen how we may join in a community—a center-of-centers —and thus transcend our individual limitations. Yet our attention to individual wholeness precludes the possibility of becoming cogs in some giant, dehumanizing machine. This balance, or tensegrity, is characteristic of our world, wherein every holon has the oppositional tendencies symbolized by the two faces of Janus. Love holds us together and apart.

Erich Fromm: *"Mature love is union under the condition of preserving one's integrity, one's individuality. In love the paradox occurs that two beings become one and yet remain two."*[699]

Søren Kierkegaard: *"For without a you and an I, there is no love."*[700]

We are centers of action who form centers-of-centers and, in so doing, participate in the universal unfolding of contextual value (or meaning). The connections we form inform the exact path that value-in-action will take. We are perfecting the *"habit of loving"* and creating harmony between Reason, Wisdom, Beauty, and Power. This book has been an attempt to show that we still have time to form a community which enriches human and nonhuman life

and the whole of reality from every perspective. The love story of Value and Action happens in and through us. Justice is an objective measure of the degree to which we meet our moral duty to act as usufructuaries of free-energy. And, although we must now conclude, we are more prepared to take on our metacrisis. Great challenges still lay ahead, but we have the tools to turn these potential problems and crises into opportunities for transformative growth.

Any revolutionary action directed at any crisis is symbolically pointing beyond itself towards a metacrisis. In discovering love as the tendency for Value to inspirit Action, and Action to ensoul Value, we have simultaneously demonstrated metarevolutionary principles which come from domains such as thermodynamics, metaphysics, game theory, and ultimately their synthesis into something even greater. In love, we perfect each other in a gradient approach to the absolute Good. In short, our metarevolution is aimed at bringing about the most meaningful, moral, and experientially beautiful existence. We can only do this through love.

CONCLUSION

"And while in his time he may have been a hero,
he is a leaf that, when we grow, falls away."[701]

- Rainer Maria Rilke

This is a metarevolutionary manifesto. Political manifestos deal in relatively simple and linear action (as in transformation); revolutionary manifestos deal in relatively complex and nonlinear action (as in transformational experiences); and metarevolutionary manifestos deal in the recursive complexification and consciousness-expansion of the action-centers whose choices shape the political and revolutionary domains. Metarevolution exists in the space between all political and revolutionary action, even as it makes a transcendent leap beyond this milieu.

Our metarevolution is composed of actions directed at centers of action and their underlying metaphysical condition: the Good. As such, we have ventured into the space between and beyond all revolutionary manifestos, and made an attempt to address both our contextually situated metacrisis, and the general dynamics of any such system of crises. Success shall be measured by this metarevolutionary manifesto's applicability to all action, and the degree to which it influences the trajectory of our actuality towards perfect representation of the Good.

So:

May your life be changed, so that you may change us all.

May we be ourselves, and also parts of selves beyond ourselves.

May we imagine, create and come to resemble images of a most-perfected humanity.

May we perfect our humanity through psychological-cultural integration of our shadowy capacity for inhumanity.

May we find meaning through the symbols the Good scatters as clues.

May we be optimists and move beyond the present Age of Nothingism.

May we be vigilant to the ongoing possibility of nihilism.

May we play our part in the cosmic self-organization of complexity and consciousness.

May we play better games.

May we experience greater freedom in ends rather than means.

May we find emergent possibilities in the novel combination of centers into a more-perfect center-of-centers.

May we speak the universal language of value-in-action, and urgently confront the challenge of discovering meaning.

May we find existential relief in knowing that: We are never alone; there has never been nothing; there can never be nothing.

May we remember that Value (and meaning and morality along with it) is real, independent of our presence, perception, or relative judgment.

May we feel the heavy yet joyful burden of perfecting or destroying the Good with every action we take.

May we discover, in every significant speck, the possibility of love between Value and Action.

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